THE BRICKBUILDER

VOLUME XX — JULY 1911 — NUMBER 7

PUBLISHED MONTHLY BY ROGERS & MANSON

85 Water Street - - - - Boston, Massachusetts

Entered at the Boston, Mass., Post Office as Second-Class Mail Matter, March 12, 1892.

Copyright, 1911, by ROGERS & MANSON

Subscription price, mailed flat to subscribers in the United States, Insular Possessions and Cuba	$5.00 per year
Single numbers	50 cents
Subscription price, mailed flat to subscribers in Canada	$5.50 per year
To Foreign Countries in the Postal Union	$6.00 per year

SUBSCRIPTIONS PAYABLE IN ADVANCE

For sale by all news dealers in the United States and Canada. Trade supplied by the American News Company and its branches.

ADVERTISING

Advertisers are classified and arranged in the following order:

	PAGE		PAGE
Agencies — Clay Products	II	Brick Enameled	III and IV
Architectural Faience	II	Brick Waterproofing	IV
,, Terra Cotta	II and III	Fireproofing	IV
Brick	III	Roofing Tile	IV

Advertisements will be printed on cover pages only.

CONTENTS

PLATE ILLUSTRATIONS

FROM WORK BY

ALFRED S. ALSCHULER; COPE & STEWARDSON; CASS GILBERT; JANSSEN & ABBOTT; CHARLES BARTON KEEN; PARKER, THOMAS & RICE.

LETTERPRESS

		PAGE
TOWER OF CHURCH SAN FERNANDO, MEXICO CITY, MEXICO		Frontispiece
SOME PROBLEMS IN SCHOOL PLANNING — THIRD PAPER	*R. Clipston Sturgis*	137
LEGAL HINTS FOR ARCHITECTS — PART I.	*William L. Bowman*	139
SECOND PRECINCT POLICE STATION, NEW YORK CITY		143
THE PRINCIPLES OF ARCHITECTURE — PART III	*William L. Mowll*	145
THE NEW CHICAGO AND NORTHWESTERN STATION		147
COMPETITION FOR A SMALL HOUSE BUILT OF NATCO HOLLOW TILE — REPORT OF JURY		149
COMPETITION FOR A SMALL HOUSE BUILT OF NATCO HOLLOW TILE — PRIZE AND MENTION DESIGNS		150
PLATE ILLUSTRATIONS — DESCRIPTION		153
EDITORIAL COMMENT AND MISCELLANY		153

UNIV. OF MICH.

TOWER OF THE CHURCH OF SAN FERNANDO, MEXICO CITY, MEXICO.

The dome is covered with colored glazed tiles.

Some Problems in School Planning.

THIRD PAPER — SUPPLEMENTARY REQUIREMENTS FOR ELEMENTARY AND SECONDARY SCHOOLS.

BY R. CLIPSTON STURGIS.

IN the preceding articles an attempt has been made to analyze the teaching requirements of modern schools, both elementary and secondary, as far as their equipment is concerned. It is now proposed to take up the study of what may be called supplementary requirements — first, the necessary space and equipment for care of clothing; second, the space and equipment for administration and teaching force, entrances, stairs and corridors.

The architect now has before him this definite problem: a certain number of rooms of a fixed size and for a definite use which are to be so placed as to be light, convenient and compact, with all conveniences for administration both as regards teachers and children, in addition to corridors, stairs and exits arranged to insure the safety of the children.

When all this has been economically planned it is then the architect's further duty to build of materials which will insure permanency and healthy conditions, especially cleanliness, and to heat, light and ventilate so as to protect rather than endanger the health of the children.

One of the important features of all schools is the disposition of clothing and the location and number of toilets. In elementary schools the pupils' work is all done in one room and it is therefore more convenient to have their outside clothing at the same point. As to the location of toilets there is considerable difference of opinion. Some, looking to the orderly handling of a large number of pupils, have them enter the basement where the toilets are located, so that they may be used before going to class, and so avoid needless leaving of the room during school hours. The toilets in such a system must be sufficient in number to accommodate the children during a brief period. Others prefer toilets located on each floor, do not mass the children on entering, do not dismiss them all at once, and do not require so much toilet accommodation. To concentrate the toilets and provide a large number, or to separate and provide a small number, probably differs little in economy of construction. It is rather a question of school management, and therefore one that the school authorities should study and determine. If the kitchen and shop are in the basement it is necessarily above ground with ample light. As the elementary school often has no gymnasium the rest of the basement is useful as rainy-day space for play.

With the secondary schools it is all quite different. The children it is true assemble at the same hour, but after that it is a constant change from hour to hour. They have a gymnasium and perhaps baths, so there are other things beside outside clothing to be cared for. The constant change from room to room makes it even questionable as to whether books should be in desks instead of in lockers; especially when evening work is to be considered, is it desirable to have the desks clear. It may be that even school desks are undesirable and that a simple light table would serve all purposes best. There is therefore a many-sided problem, the solution of which does not appear to have been found. Metal lockers are expensive, take much space, and both keys and combination locks give constant trouble. If the lockers are conveniently placed for outside clothes they may be inconvenient for books or for gymnasium outfits.

A three-fold equipment may seem extravagant but offers certain advantages:

(*a*) For clothing, one large room with toilets adjacent. If necessary for safety, the wardrobe locked up at nine and opened only by the attendant. Clothing hung in this way takes much less space and is an economical arrangement as compared with clothing hung in lockers.

(*b*) For gymnasium provide small pigeon-holes, 12-inch cubes, numbered for each pupil, and have all clothing, towels, etc., similarly numbered. Provide a hot room where clothing can be aired and dried. It can then be folded and put in small compass. The attendant serving the gymnasium and the wardrobe would do this.

(*c*) Provide pigeon-holes of proper capacity and number in each class room or in convenient space near by for books. Each group of pigeon-holes closed and locked by one bar, to be in charge of the teacher.

If the exercise is largely out of doors, as it should be, it might be well to have a locker building where wardrobe, toilets, baths, dressing rooms and lockers would be grouped together. If this were done there would be no need for a high well-lighted basement, for the kitchen of a secondary school should be near the lunch room, probably on top floor. The gymnasium would serve for a rainy-day play-space, and only the workshop would remain to be provided. This latter would go upstairs, or perhaps better be in a one-story building, hardly more than a shed, outside. Nothing but the heating would then be in the basement, so that the first floor could be nearly at grade.

The question of lockers and their uses raises the whole matter of ordered exercise, and what has been suggested above is in the line of economy. If by proper and justifiable economies in the high school building we can reduce the cost per pupil from $500 to $400, or perhaps even $300 (*i.e.* double the cost of the elementary), let us use a part of the saving in giving the children plenty of play and exercise space. Encourage the use of this space not only in connection with school work, but also outside of school hours; not only by the pupils of that school, but by any other child to whom it is convenient.

This is merely in line with the now recognized fact that our school buildings are too valuable a public asset to lie idle half the time. The halls should be available, when not required for the school, for other public and beneficial purposes; the class room, the shops and the laboratories should be thrown open at night for those who cannot use them by day; and so we justify our expenditure for schools by making the largest possible use of them. Three or four acres of land is none too much for a secondary school which is to serve the community in the best way. If the land cannot be had except by going some distance, is it not worth while to go that necessary distance and get it? The children it cares for are no longer

infants. If the cars do not serve, a bicycle or a pair of legs will. A brisk walk to school hurt none of those who had to take it a generation or two back and will not now. Moreover the school so located will not stay long isolated; houses will spring up about it and it will become a new center.

In a group of buildings for the Normal and Girls' Latin School in Boston an intermediate building served both schools for gymnasium lockers, baths, etc., and it would seem therefore entirely feasible and probably not expensive to have locker buildings adjoining the school, and the playing field or exercise ground serving both. Here would be the place for outer clothing, gymnasium clothes, dressing rooms and baths, and perhaps also the repair shop.

The administration in the elementary schools is very simple. Where it is a lower elementary school and the assistant in charge has a regular class room, no room is needed except one where the teachers can gather at noon. Where there is a headmaster, one small room is ample as an office, for the corridor can serve as a waiting room. In the secondary schools, where the staff is generally larger, the principal would require an outer and inner room, and rooms would be required for both men and women teachers, but neither the space allotted nor the equipment should be other than what a business man would have for his business office.

Entrance stairs and corridors are a fruitful source of extravagance. Often a false idea of the requirements for safety leads to corridors of unnecessary width and to stairs that are actually dangerous because they permit too many children in line. A corridor that will permit two double files of children to pass (about 10 feet) appears to be ample, and stairs that comfortably take one double file (about 4½ or 5 feet), are better than wider ones. Staircases should be placed well apart, so as to give two or more distinct means of exit. Rooms can be planned so that they can be served by the smallest possible amount of corridor, and the stairs so placed that every room will have fairly direct access to either of the two staircases. A plan that does not fulfil these simple requirements ought not to be accepted. Experience would seem to show that as few doors as possible should be between the child in the class room and the stairs, preferably only one, the class room door, placed near the teacher and under her control. These are the chief accessories to the rooms, which must be studied to make the economical plan complete.

In selecting materials for city schools there is but one class that should be considered, the simplest and cheapest of durable, fireproof materials. For finished floors in corridors terrazzo has proven inexpensive and durable and is easily cleaned. For stair treads North River stone seems the most permanent of all inexpensive materials available in the East. A good grade of linoleum glued to a cement surface or to a cast-iron tread has much to recommend it. For class room floors wood is still the best material where desks must be fastened down, but elsewhere linoleum on concrete is better, for it is more durable, cleaner, and more easily taken care of. Everything under foot should be of a material that will not readily create dust by attrition. Removing the dust is an expense, as is also the renewing of surfaces so worn, but the serious evil is the dust in the air, which is injurious to health. As far as possible one may avoid materials that readily create dust, but it is more fundamental to remove the conditions that make material friable.

The heating of our schools is based on the supposition that the only important thing is to take outside air, heat it, introduce it in sufficient quantity and then remove a similar quantity of air that has been vitiated by having been breathed. If it seems worth while to follow up any particular branch of school curriculum and find out if it is producing results, it is certainly worth while to follow up the theories of heating and ventilating and find out what we expect to happen. It is easy to prove that a certain number of cubic feet of air at a certain temperature is being delivered and that a certain number of cubic feet are being withdrawn. It would be valuable for us to prove that the air being delivered is really good to breathe, and that the air we are throwing away has really served its purpose and is no longer valuable. As a rule the heated fresh air has been deprived of all its moisture, and in this condition is not good to breathe. It is the dry air which shrinks the wood, makes floors rub to dust, makes everything brittle and friable and so loads the air with dust. This fresh air is not only dry but dusty, and the dust is often not merely an irritant but an active poison. It is easy to stand a high temperature when the air is dry — conversely a low temperature is comfortable if it be moist. As we provide dry air, a high temperature is demanded. If the air in a class room shows 70°, 6 feet from the floor, it is a matter of conjecture whether the breathed air goes up or down, and it is certainly open to question whether it makes for the outlet and leaves the room as directed.

Until this matter of keeping moisture in the air is solved much money is being wasted in heating plants which are furnishing air dangerous to health and injurious to the building. It is little wonder that there has been such enthusiasm and so great a demand for fresh air rooms, and that children have stood exposure to cold and thriven on it, for they have been breathing air that is naturally moist. If we could give our schools moist air in winter there would be no demand for rooms at 70°, and fewer children would be found who required open air or fresh air treatment. Incidentally the building would benefit and there would be smaller bills for repairs on floors, doors, sashes and window cords. This is one of the important fields for study. Here the knowledge of the physician and the physicist should supplement the study by the architect and the results of each experiment should be tested until there is reasonable assurance that the object aimed for has been attained.

Economical school planning is then a joint affair where all those interested must work together. The teachers and school authorities must determine what is essential and what is non-essential, and how much of the latter they can afford. Physicians and teachers of hygiene and athletics must determine what is necessary for that physical condition of the child which will enable him to take advantage of the mental training offered him. The architect must enter sympathetically and intelligently into all these problems, share in the study and bring to a final solution his knowledge and experience as a true master builder.

Legal Hints for Architects. — Part I.

BY WILLIAM L. BOWMAN, C.E., LL.B.

THE architect is primarily an artist, and, as Ferguson, the historian of Architecture, asserts, "his object is to arrange the material of the engineer not so much with regard to economical as artistic definiteness, and by light and shade and outline to produce a form that in itself shall be permanent and beautiful." The artistic temperament required to produce "frozen music," as architecture is so aptly termed by Schilling, has no time and little use for the sordid details and requirements of business. Architecture and business are truly antitheses, and in this respect history is replete with the calamities of genius. As our scientific knowledge has grown apace, so the requirements and demands upon the architect have increased, and yet, notwithstanding these changes and the fact that we live in a very material age, many an architect to-day, as of old, is essentially an artist and dreamer. His inability to comprehend and care for business details or to protect himself from the guile or imposition of his fellow-men is a phase of life with which the lawyer is especially familiar. The writer's experience with such situations and the righteous indignation and pity thereby aroused accounts in a large measure for these articles, in which an attempt will be made to present the most common pitfalls of the profession as are shown by everyday examples and to suggest possible ways and methods of overcoming such difficulties. While most of the important legal questions with which the architect should be familiar will be considered, naturally such considerations must be very general and brief. It is hoped, however, that these general considerations (which must not, of course, be relied implicitly upon for any specific case) will not only be of benefit and aid to architects, but that with such knowledge the architect will in turn minimize the difficulties and disagreements which are bound to arise between architects, owners, builders and contractors.

Before Employment.

Statutes. Consideration of situations arising before employment involves the preliminary questions as to whether one is an architect and whether he is legally entitled to practise. The law requires that an architect shall have at least the ordinary skill, knowledge and judgment possessed by men of his profession. Since the possession of such qualifications is a condition precedent to the recovery of remuneration for any services, it is incumbent upon the architect-to-be that he believe and know that he possesses the requisite skill and experience.

Although the Fourteenth Amendment to the Constitution of the United States provides that no state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States, yet it has been judicially decided that the right to practise a profession does not come within the Constitutional equality of privilege; hence it is that the various states are able to pass the now familiar laws for the protection of the general public, requiring the examination, registration and licensing of doctors, lawyers, dentists, etc. Upon the same principle, Illinois, in 1897, passed an act which provided for a State Board of Examiners, and compelled all practising architects, and all persons thereafter intending to become architects, to comply with certain conditions or be guilty of a misdemeanor, which carried as a penalty a fine of not less than $50 nor more than $500 for each and every week during which the offense was continued. Thereafter two other states, New Jersey and California, followed suit, but as the provisions of their laws are based largely upon the Illinois statute, we will only consider briefly some of the details of the original statute.

In Illinois, a person desiring to become an architect must be over 21 years of age; must pay a fee of $15 to take an examination with "special reference to the construction of buildings and a test of the knowledge of the candidate of the strength of materials, and of his or her ability to make practical application of such knowledge in the ordinary professional work of an architect and of the duties of supervision of mechanical work on buildings, and should also seek to determine his or her knowledge of the laws of sanitation as applied to buildings." After the examination is passed satisfactorily, then the Secretary of the State Board of Examiners issues a certificate and upon the payment of $25 a license is issued permitting the person to practise architecture. Regarding practising architects, the act provides as follows: "Any person who shall by affidavit show to the *satisfaction* of the State Board of Examiners of architects that he or she was engaged in the practice of the profession of architecture on the date of the passage of this act, shall be entitled to a license without examination, provided such application shall be made within six (6) months after the passage of the act," etc. The "satisfaction" required by this law makes it discretionary with the Board of Examers as to whether or not they will grant a license, and it has been held that in the absence of a wrongful abuse of such power amounting to fraud against the rights of the applicant, the Board could not be mandamused and compelled to issue a license. In this connection, and as it is human for a person to enlarge upon the work which he has done in the past, practising architects should be very careful that an affidavit made for this purpose is absolutely and unqualifiedly truthful, because there have been instances where a license has been refused solely upon the ground that the applicant in his affidavit had prevaricated.

One of the most important provisions of this law is that each licensed architect shall have his or her license recorded in the office of the County Clerk in each and every county of the state in which the holder thereof shall practise, and failure so to do shall be deemed sufficient cause for the revocation of the license.

Said law further provides that licenses may be revoked by the unanimous vote of the State Board of Examiners for gross incompetence or recklessness in the work of construction or for dishonest practice. It is also required that an annual fee of $5 be paid to the Secretary of the Board, who shall thereupon issue a certificate of renewal, and any licensed architect who shall fail to have his or

her license renewed at the proper time shall have his or her license revoked at the discretion of the Board.

So far we have considered only individuals. The law further provides that in the case of copartnership of architects each member whose name appears must be licensed to practise. No stock company or corporation will be licensed to practise architecture, though they may employ licensed architects. The above are the important requirements of the Illinois statute, which are more onerous than the later laws on the subject.

It should be noted that the Illinois statute does not contain any provisions regarding the practice in Illinois by architects of other states; hence, it is to be assumed that if an architect desires to practise even temporarily in that state he would have to comply with the provisions of the law. Under the California law this situation is covered by a provision permitting a temporary certificate to be issued upon the presentation of satisfactory evidence to the Board of the District in which the structure is to be erected, that the architect is a competent architect, etc.

The New Jersey laws in addition to a fine for failure to comply with the law, permits also imprisonment in the county jail for a period of not less than one month.

It is very probable that other states will follow with similar statutes and it therefore behooves all architects and those intending to practise architecture to consult the state laws or some attorney in this regard and thus save themselves possible expense, time and mortification.

There is still another class of legislation which architects must beware of, and that is municipal or town taxes upon their profession; for example, the following is such an ordinance: "No person, firm, etc., shall be engaged in prosecuting or carrying on any business or profession hereinafter mentioned without having first paid a special license tax therefor, as follows, to wit, architect, civil engineer, surveyor, for either $15." It is often a serious question whether an architect is carrying on his profession within the scope of such an ordinance. The following facts show how far this tax is upheld. A certain firm of architects resided and had offices at A. They solicited and superintended certain work at B. The town of B had such an ordinance and compelled the architects to pay the license tax. Said tax was paid under protest, and the architects thereafter sued to recover their money, on the ground that all of the plans and details had been drawn at their offices at A, hence they were not liable for "carrying on business" in B. It was decided, however, that it was apparently their intention to carry on part of their business at B and that they must pay the tax.

The above considerations call for the following recommendations:

First. That no person should consider practising architecture unless he knows that he has the requisite skill and experience.

Second. Practising architects and would-be architects should annually ascertain whether any state laws have been passed governing their profession, and, if so, carefully follow each and every provision of said law.

Third. Ascertaining whether or not there is any municipal or town license tax required by any of the municipalities or towns where the office or any of the jobs are situated.

Fourth. Before taking employment in another state to be sure and ascertain the statute requirements of such state.

Employment Classified. Assuming that the architect has complied with the state and municipal requirements which are conditions precedent to his practising his profession, it will be found important definitely to consider his possible employment under the following headings: (1) By an individual; (2) by a business corporation; (3) by a municipal corporation; (4) by a state or the United States; (5) by competitions.

There are a few general preliminary rules which apply to all employments. The first one and the most important is to always have the terms of employment in writing, as this safeguard will obviate many disputes as to whether there has been an employment, and further difficulties in recovering compensation where it is necessary to resort to law. A convenient, though of course not absolutely binding method, is to write a letter of confirmation of an oral employment. In this connection, it should be noted that the Statute of Frauds in most states requires that any agreement not to be performed within one year from the making of the agreement must be in writing, otherwise said agreement will be void and unenforceable.

(1) Employment by an individual is the least dangerous of any of the classes to be considered. The chief things to keep in mind and have clearly understood are, who is your employer, what you are to do, and how much and when the employer is to pay.

A few illustrations will show the importance of knowing by whom you are employed. In one case the architect was visited by A, whom the architect knew was not financially responsible. Upon being asked to prepare plans for an apartment house he assumed and supposed that A represented his wife (B) and her father (C). Rough sketches were drawn in accordance with A's suggestions and they were marked "A & C." Later A told the architect that C did not want his name to appear. At a still later conference, A showed the architect a plot, stating that C owned one half and that he (A) controlled the rest. The plans were completed and the building put up upon the plot and the architect received a payment from A, who later refused to make any further payments. The architect thereupon sued the wife, B, and the father, C. Upon this evidence he had to discontinue his action as to B, and his recovery against C was reversed on appeal because the Court held, that if there was any obligation on C's part, it was joint with A. In another case, the architect went to A, who was a large real-estate dealer interested personally and as director and officer of several corporations in the promotion and sale of real estate. The architect was employed to draw up a scheme for the general improvement of a large tract including buildings, and to assist him he was given a map of the property. Nothing was said as to the ownership of the property and the architect assumed that he was personally employed by A, whom he knew to be responsible. After the plans were completed and submitted, nothing was done, nor could the architect secure any further information regarding them or the contemplated work. Upon a suit being brought against A to recover for the services, immediately upon the map being put in

evidence the Court dismissed the case, since on the back of the map it appeared that the property belonged to a corporation, and it was held that such information was notice to the architect that the property belonged to the corporation, and there being no evidence, of an absolute promise on the part of A to pay for the plans, there could not be a recovery from him personally. Of course, as usual in such cases, by the time the case got to trial and was dismissed, the corporation was bankrupt.

In another instance a town committee of which A was spokesman were raising money to put up a building to induce a manufacturer to locate there. A and some other committeemen called upon the architect, telling him their purpose and suggesting that he get up some plans for the building. He did so and after they were completed then took up the question regarding payment for the same. Upon the trial there was a conflict of evidence as to whether or not the defendant A promised to pay the architect subsequent to the completion of the plans. A judgment was recovered by the architect, but upon appeal it was reversed on the ground that there was no fair preponderance of evidence of any express promise to pay for the plans on the defendant's part, and if the work was not done on the defendant's credit, but for some other person or party, any subsequent express parol promise of the defendant to pay the same would be void as a promise to pay the debt of a third party.

Another common case was where certain promoters acquired property for speculative purposes, which property was later turned over to a syndicate in which the promoters held a half interest. A trustee was appointed by the syndicate to develop, manage and sell the same. The promoters had an architect do certain work, including the designing and drawing of plans for a hotel to be erected upon the property. After the work was done, the syndicate refused to pay for the same, and upon suit being brought it was held that the authority of the promoters to bind the syndicate did not extend beyond the purposes of the enterprise, namely, the development, management and sale of the land, and that the construction of such a hotel as planned was not presumably one of the purposes of a speculative acquisition of suburban real estate and hence the syndicate were not liable.

As is shown by these few examples, it frequently happens that if the architect fails to recover against the party sued, he still has his rights against some other party, but it is almost the invariable rule that in such instances the other party is either financially irresponsible or has, during the time consumed waiting for the trial, appeals, etc., so arranged matters that the result of an action against such party would be very questionable. Of course, the chief reasons for this difficulty are the delays of the law and the expenses involved in carrying on litigation, with the possible chance of the running of the Statute of Limitations, especially where the attorneys for the defendant do everything to delay matters.

The most serious question, namely, as to whether or not you are employed, always involves the question as to whether or not the contract for employment is conditional. Without a doubt, the bane of the architect is the conditional job. Young architects especially are prone to waste valuable time and money in drawing plans for irresponsible parties or promoters in the hope of securing employment. Except on careful consideration, no architect should make his compensation conditional upon suiting the client's taste or until the sketches meet with the client's approval, since that condition involves a personal equation which is sometimes impossible to overcome. In a written proposal an architect agreed that the client would be under no obligation until the sketches met his approval, and should the architect at any time before said approval become in any way unsatisfactory he would retire upon return of all the sketches, without claim for any services performed. Of course, notwithstanding this agreement, the architect, after spending several thousand dollars' worth of time and materials, etc., considered that he should be compensated, and sued accordingly, but of course with no success. If there is no written evidence of the employment sufficiently exact in its terms to make a complete contract, you can always count upon the employer finding some condition which was a precedent to the architect's employment or receipt of remuneration. The usual conditions concocted to cover disagreements as to the question of employment are that the plans were to be satisfactory to or approved by the employer; or that the plans were to have been for a building of a certain cost; or that the architect was to procure contracts for erection within or near his estimates of cost; or that his employment was conditional upon the acquisition of a certain lot or tract of land, or upon the use of certain property for certain purposes. Of course, if the client can prove to the satisfaction of a jury that any of these conditions were conditions of employment or of the right to remuneration, the architect naturally loses not only his time, labor and expense, but he is further burdened ordinarily with the costs given against him in the action, in addition to his own expense for witnesses and attorney. A few examples of how these conditions have worked will very quickly show the importance of this matter. Upon a trial the evidence showed that the architect had prepared preliminary sketches for the erection upon premises owned by A of a building costing over a million dollars. These sketches or plans were prepared in order that they should be submitted for consideration and selection. A kept them in his possession for several months, and upon five or six occasions the architect visited him in regard to the same. The evidence further showed that A, who had died before the action came to trial, had told another witness that he had had plans prepared for a building by the architect, that he liked them very much and approved of them, and that according to the plans it would pay him to make the investment and put up the building. Later the plans were returned and the property sold, and A refused to pay the architect. The court held, and it was sustained on appeal, that there was lack of proof of an employment of the architect, upon the ground that from this evidence and from the fact that no use was ever made of the plans and no building ever erected, there was no acceptance of the services proven from which either an employment or an acceptance of the services could be inferred. It was further held that there being no employment proven, there could be no recovery of the value of the services on *quantum meruit* or reasonable value.

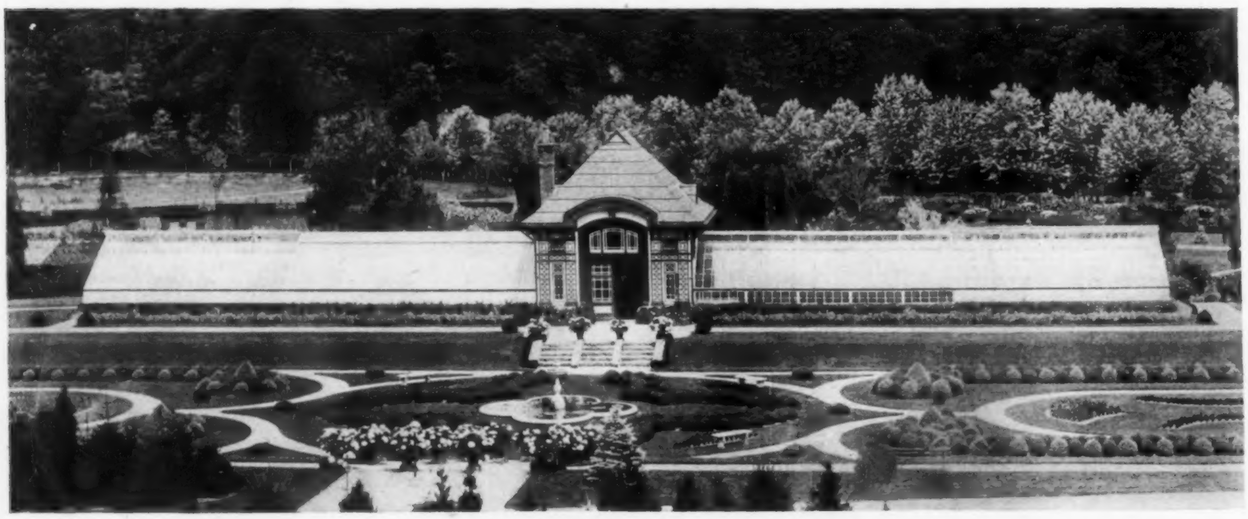
Probably the most usual and popular condition attached

to an architect's employment is the condition that he shall give his employer a building which shall cost within a certain fixed sum. On account of the fact that the architect's remuneration is some percentage of the actual cost of construction, the general public immediately assume that which sometimes is the fact, that the architect tries to make a building cost as much as possible to increase his compensation. The law as regards employment by others than municipal or governmental bodies is well settled, that where the owner stipulates that the plans and specifications shall be for a building not to cost over a specified amount, the architect must draw the plans and specifications for a building to cost reasonably near that amount, otherwise he fails to live up to his contract and cannot recover for his services. For example, it has been held that an employment to prepare plans for a house to cost $100,000 where the contractor's estimate, including architect's fee and superintendence, was $107,500, and also in another case where the plans were to be within $50,000 and the estimate was $52,500, and in a further case where the plans were not to exceed $2,500 and the estimate was $3,100, that in each case there was a substantial performance and the architect could recover his compensation for such plans and specifications. The following are cases where recovery was not permitted, namely, where the contract called for a building to cost $4,300 and the lowest bid was $7,000; where the cost was to be $18,000 and the lowest contract offer was $35,000; and where the cost was not to exceed $4,500 and the estimate was $8,000.

These considerations show that even when dealing with individuals an architect should have the contemplated cost of the proposed building for which he is to draw plans in writing and he should further know and have a contractor willing to undertake the construction according to the plans and specifications prepared for a price not to exceed such cost.

This raises another serious problem for the architect since primarily he is employed to furnish plans and specifications for the erection of a building and is only entitled to remuneration therefor if they are made in accordance with the direction of the owner. When the owner wants gold trimmings for his bath tub, it is very difficult to plan a suitable house and include such a fixture for $5,000. This question becomes of such serious importance in employment by municipal and other governmental bodies that further discussion will be temporarily deferred.

The following illustration shows that inequitable results are often reached by a conditional contract. A was the owner of a large tract of land. He entered into an agreement with B, an architect, that the latter should lay out A's land, have it surveyed, make plans, etc., as to where houses should be constructed and determine their style as required by the natural situation; that B was to make no charge whatever for such services, but that in the event of any of the land being disposed or let for building purposes that then B would be appointed architect on A's behalf to see that the building construction, etc., was proper, etc., and that parties building on the land should pay B one and one-fourth per cent of the outlay, provided they did not employ B as their own architect. The agreement further provided that in the event of A or his executors wishing to dispense with B's services at any time he, or they, should be at liberty to do so, with the understanding that he or they should remunerate B for the time, trouble and expense he had been put to in making his preparations. Thereupon B went ahead, had the land surveyed, expended large sums of money and time in making plans, etc. A then died and his executors sold the land, but not for building purposes, and also dismissed B without any remuneration. Upon suit being brought, the Court held that there should be no recovery for the work done, because the only event upon which the architect was entitled to remuneration had not happened, namely, the disposal of the land for building purposes. The theory of the Court was that under the circumstances, the land not having been disposed of for building purposes, the services of the architect were not necessary, and since he had contracted with that contingency he should be held to the strict terms of his contract.



GREENHOUSE AT TUXEDO PARK, N. Y.
Donn Barber, Architect.

Second Precinct Police Station, New York.

STOCKTON BEEKMAN COLT AND THORNTON CHARD, ASSOCIATED ARCHITECTS.

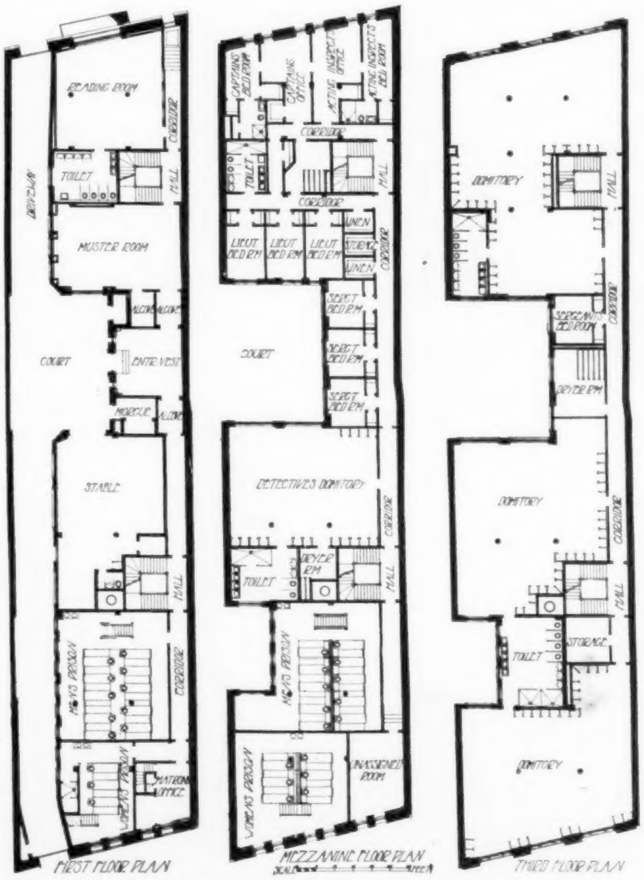
THE new Second Precinct Police Station, which has been completed recently, is situated at 156-158 Greenwich street, running through some 250 feet to Washington street. This is one of the four new police stations planned under the administration of Gen. Theodore A. Bingham, Police Commissioner of the City of New York, to replace old buildings which are poorly equipped for patrolmen, prisoners and administration.

The first and mezzanine stories are of granite with wrought-iron window guards, gates and lamps; while the superstructure is of impervious red brick. Steel floor beams and girders with terra cotta floor arches and partitions of fireproof blocks are used throughout. The public floors and corridors are finished in cement and terrazzo, while the vestibule and muster room are wainscoted in marble. In addition to the two main staircases of iron and slate provision has been made for an elevator, which will give ample and ready access to all parts of the building.

The interior arrangement, especially on the first floor, is a departure from the stereotype New York City police station. The idea is to give as much privacy as possible to the muster room containing the lieutenant's desk, as well as to the entrance where the patrol wagon discharges prisoners. To this end the main entrance is situated in a central court, accessible by a driveway from both Greenwich and Washington streets. This feature serves the double purpose of privacy and security. Heavy iron grille gates guard the driveway entrances, which may be closed in case of riot or to prevent curious persons from entering the court. All the undesirable excitement and interferences attendant on the arrival of a patrol wagon at the door of the old type of police station with its muster-room entrance and windows on the street is here avoided.

Directly off the court is the entrance to the stable which is separately ventilated and equipped with open stalls and quick-hitching apparatus. These quarters are also prepared for the storage and care of automobiles. Accessible from the court are two isolated rooms with special arrangement for sanitation and ventilation, one is the morgue and the other a gasoline pump-house for the automobile service. The latter room is separately ventilated on account of gasoline fumes while an electric fixture is especially provided with a double-glazed electric lamp.

At the Greenwich street front is a separate entrance for reporters, admitting them by private corridor direct to the muster room. The ground floor provides for a reading room and recreation room for the patrolmen, with toilet adjoining. In the rear of the building, on Washington street, are the cell rooms. These cells are of the most recent pattern, and extend three tiers in height. They are equipped with modern devices for sanitation and ventilation. There are two departments, one of thirty cells for men, and another of fifteen cells for women. The cells and window bars are of tool-proof steel with interlocking connections. Adjoining the women's department are the quarters for a matron.



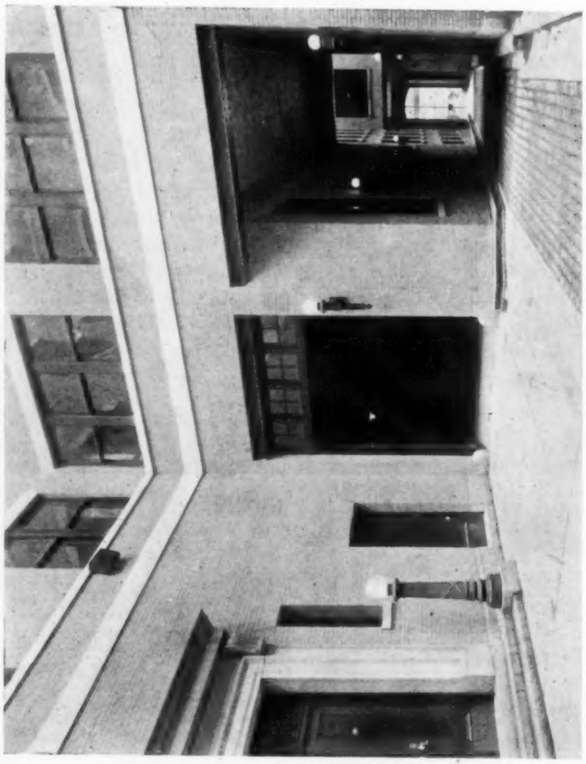
PLANS OF SECOND PRECINCT POLICE STATION.

The upper stories of the building are arranged for sleeping quarters, with twelve private rooms and toilets for the officers and nine dormitories, accommodating some one hundred and sixty men. There is also a separate dormitory for detectives. All these quarters are equipped with comforts consistent with discipline and economy, each dormitory having numerous ventilated lockers in addition to ample lavatories, showers, and drier rooms for wet garments and boots.

The sleeping quarters have been planned inexpensively with the sanitary and hygienic principles carefully considered, the air space allotted to each bed being equivalent to that prescribed for hospitals. Hospital finish has been used throughout and ample window space furnished. On the roof is a large deck-house which may be used ordinarily for a gymnasium and in time of riot for a kitchen and mess hall. In the cellar are located the boilers, coal storage, pumps and repair shop, with ample storage rooms for ballot boxes, proceeds of raids, etc.

The contract price for the entire building, complete, amounted to approximately $183,000.

BATTERY OF CELLS, MEN'S DEPARTMENT.



CENTRAL COURT.

WASHINGTON STREET FACADE.

SECOND PRECINCT POLICE STATION, NEW YORK CITY.
S. B. Colt and Thornton Chard, Associated Architects.

The Principles of Architecture.—III.

BY WILLIAM L. MOWLL.

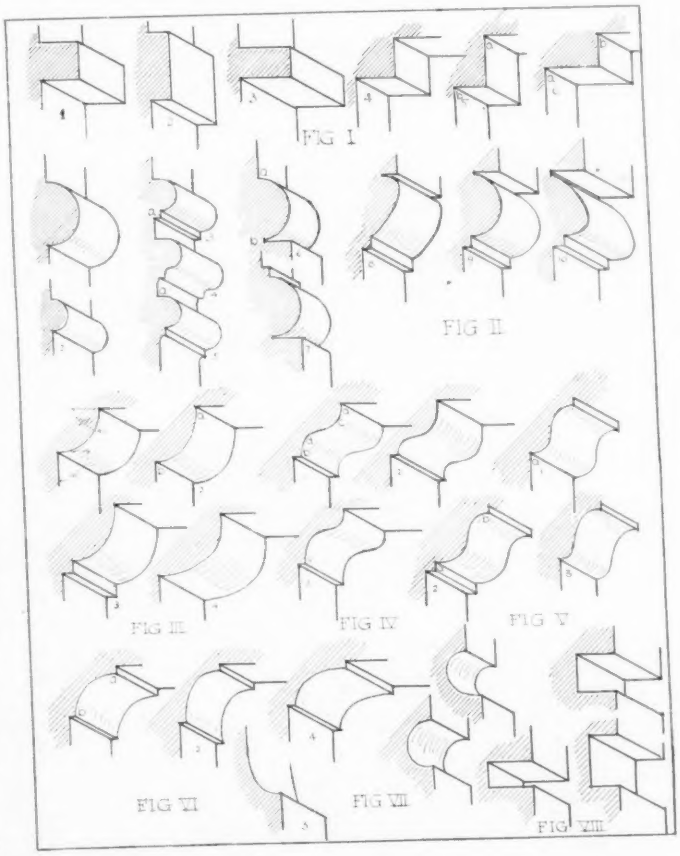
Classical Profiles.

THE two elements of visual effect of which mouldings are made up are contrast and gradation. Mouldings are seen by the effects of light and shade on their surfaces. The degree of these effects varies with every change in the amount of light, so that it may be said that the contrasts and gradations characteristic of each are contrasts or gradations of surfaces. It is a matter of common observation that the relative effects of mouldings and their parts are the same in all lights. Strong and weak, brilliant or flat, they are always seen to be the same kind of surfaces.

Analysis of the surface contrasts of each moulding explains the origin of the feeling of its character.

The fillet, Fig. I is formed by the intersection of three planes, two parallel and perpendicular to a third, and is symmetrical. It presents the maximum of contrast in a single moulding form. It seldom appears without modification, or in large dimensions, because the abruptness of its contrasts are such as to withdraw attention from other neighboring objects. On account of its absolute balance it can be used unmodified only where a vigorous check to movement is required.

The fillet as used at the intersection of major planes or planes and curves is formed by the intersection of two planes perpendicular to each other. It is again practically symmetrical when the two faces are equal. It is in this form an arrest, and since in few instances is a pause desired in a set of mouldings, it is seldom so used. In the form shown at Fig. I.5 the vertical face makes a more emphatic contrast at (*a*) than at (*b*) because the vertical face is broader than the horizontal. The general effect is unbalanced with a suggestion of movement upward and outward. The form at Fig I.6 is rare as its suggestion of movement is not that generally sought. This most "contrasty" moulding is rarely used as a principal section but is very frequently found as a minor moulding where, used at a relatively small size, its function in diminishing a contrast by breaking it up into small areas or strips will be illustrated in connection with the other profiles which follow.



The half-round section, Fig. II.1, has a surface which presents a full gradation and two contrasts only less strong than those of Fig. I.1. The surfaces are similar in their hold on the attention. The torus is never used in the ascending portions of any arrangement because the vigorous hold of its symmetry is destructive of movement. Even when the astragal is so used it is invariably with the accompaniment of a fillet below the main portion of the moulding. In Fig. II.2 the mass is evenly divided. In Fig. II.3 the larger portion is above. In this respect the effect would be similar if the shape were as at Fig. II.4. The latter example has however no definition, and consequently little interest. The sharp contrasts in Fig. II.3 contribute much better to the purpose of the moulding. Then instead of softening off below, the fillet at (*a*) Fig. II.3, not only disturbs the balance but breaks up and diminishes the contrast below by making the surfaces which intersect with each other narrower. That this is the intention is shown where this feature, commonly used for the neckings of columns, is completed as at Fig. II.5. The quarter-hollow below still further diminishes the contrast, while allowing in many examples the formation of an actual plane surface at (*a*), on the top to increase the contrast at that point.

The torus placed at the base of a surface as in Fig. II.6, gives no special sense of direction when unaccompanied or unmodified. In this arrangement commonly used, the contrast above at (*a*), although different from that below at (*b*) is more or less its equivalent. Both are secondary in interest to the symmetry of the torus. A fillet placed above the torus again performs the office of disturbing the balance and breaking up the contrast as in the case just cited, permitting the combination to convey an impression of pressure downward which is, in common with other bases in all styles, the only exception to the general rule that throughout architecture all movement

is upward. When the half-round is used in capitals it is deformed so as to make the major contrast or interest fall in the upper portion, so as to cause the form to be unbalanced upward. Compare Fig. II.8, the type usually occurring with Figs. II.9 and II.10, in which the contrasts or form masses fall lower down.

The "quarter-round," shown in Fig. III.1 is never effectively used in the form which the term signifies. That section is as dead and characterless as the fillet with equal faces. A preponderance of one dimension of its section over the other at once removes the immobility of the quarter-round. The curve at (*a*) leaves its tangency to the vertical plane more slowly than at (*b*) so that the contrast at (*a*) is more marked. There is more of the mass of the moulding at the side (*a*). The suggestion of the movement is upward. This is the more marked if the angle at (*b*) is broken up by a fillet. This has the further effect of actually disturbing the balance or approximate balance of the ovolo. The surface Fig. III.1 is nearly a balance, practically a quarter circle, and the eye finds little reason for seeking one edge rather than the other. In Fig. III 3 there is presented a larger mass at one side and a smaller at the other.

These angular and convex mouldings together with those of the group about to be described are frequently distinguished from all others as mouldings of support or footing because of their stronger effect. This character is attributable to two causes, one structural and the other due to visual effect. The convex mouldings permit the forming or construction of projecting parts with less prejudice to the security of the material of which the parts are made, both while the material is being formed and while it is subjected to the stresses which it must resist in the structure. The larger factor however is the superior attractiveness of the angular and convex forms which they owe to the strong contrasts and gradations formed on their surfaces. In illustration of this idea the modillions or brackets of the Corinthian order are excellent examples. This well known form which has been repeated myriads of times may have had its origin in the adornment of the end of a projecting beam, but in its shape it has not the slightest suggestion of structure. Its lines are such, in fact, as to ignore connection either with the wall or the under side of the cornice. Their value is purely optical. Interesting objects of form contrasting with that of other parts of the entablature in the upper portion of which they are placed, they serve continually to distract attention from its lower to its upper portion and thus to contribute to that intangible current of movement in which ideas of support and lightness are confounded.

The next moulding forms to be considered are those of double curvature, which naturally in characteristics stand between the convex and the concave surfaces and vary in force according to the degree in which the convexity or concavity predominates.

The cyma reversa, Fig. IV.1 has always a definite direction because it has a major contrast, (*a*), placed unmistakably at one side of the form. Because of the certainty of the direction of these mouldings they contribute to a lighter or "quicker" general effect than those just considered. The cyma reversa makes one contrasted junction with the adjacent surfaces at (*a*) like that which the ovolo makes, and at the other edge (*b*) is prevented from gliding unmarked into the surface below by a fillet of two contrasts. The degree of movement across the surface depends upon the relative amount of hollow. As the hollow increases in relative size as in Figs. IV.2, and IV.3, the amount of convexity and the contrast at that edge are diminished until their effect is seriously rivaled by the fillet on the other edge.

Fig. IV.1 is "stronger" in support than Fig. IV.3 because its effect of the asymmetry is stronger. There is more difference between the mass (*c*) and (*d*) in Fig. IV.2 than the similar masses in Fig. IV.3, thus producing a more marked asymmetry. Movement may be said to have two characteristics which are represented by the ovolo and cavetto — volume and rate. The ovolo is stronger and more sluggish, the cyma reversa has less force and more vivacity.

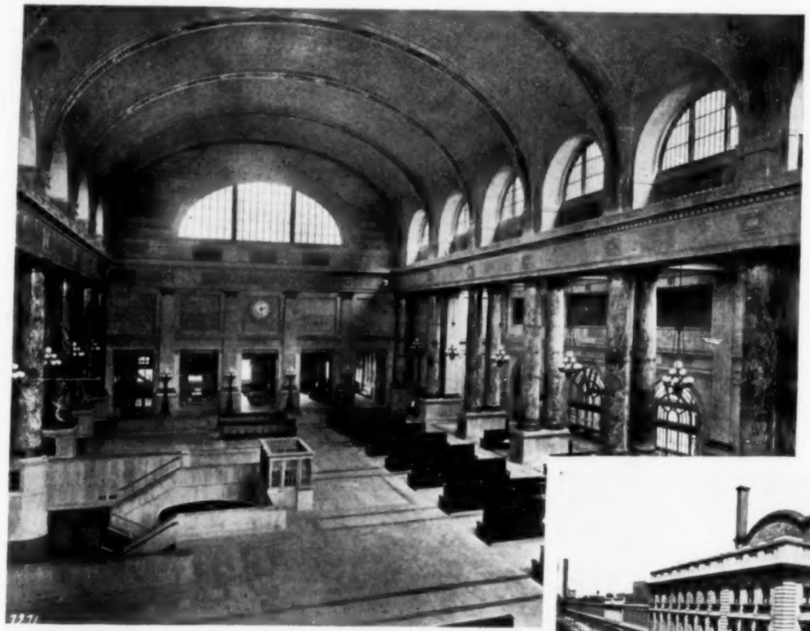
The cyma recta is not at all adapted to the suggestion of support as are the preceding sections in varying degrees. Its main masses, contrasts or interests are not unquestionably unbalanced. In the form shown at Fig. V.1 the larger contrast is at (*a*). This contrast is generally diminished by placing a fillet at (*a*) as in Fig. V.2. The main contrast is even then not clearly shown at (*b*). The upshot of this hesitation is that the moulding is not adapted for suggestion of support but rather for an arrest, without marked balance, in positions where that suggestion is required. It is, consequently, most used for crowning sets of mouldings or divisions of a composition.

Moulded surfaces which are altogether concave in section are less capable of variety of interest than other sections. They have, on the whole, less light on their surfaces so that less striking gradations are formed with less brilliance. This contrast which they form with the surface upon which they are placed is their chief characteristic. The "quarter-hollow" forms continuous junctions with each of the adjacent surfaces, (*a* and *b*), Fig. VI 1. This surface is balanced. There is possibly a suggestion of movement across the surface, Fig. VI.2, upward. The hesitation is due to the slight lack of balance. The congé shown in Fig. VI.3 is slightly more emphatic because of the absence of one of its fillets, leaving to the other more unquestioned supremacy. This is the only common example of the use of a moulding with an unmarked "gliding" junction.

The cavetto shown in Fig. VII gives a strong line of shade, less strongly marked by gradations because of the exclusion of light. It is in this form strongly symmetrical. The symmetrical hollow is generally used vertically to serve as a guide as in the Doric columns discussed in a preceding chapter. In bases it is used unsymmetrically, its departure from balance agreeing with the movement of the base downward.

The channel shown in Fig. VIII is a harsh and "contrasty" moulding form comparable to the fillet of which it is the inverse. It should probably be placed with the fillet in grading the sections in the order of their force.

The comprehension of these visual effects is the key to much hitherto unexplained in this art. They are a part of the pure or inorganic design of architecture.



Main Waiting Room.
Entrance Lobby.

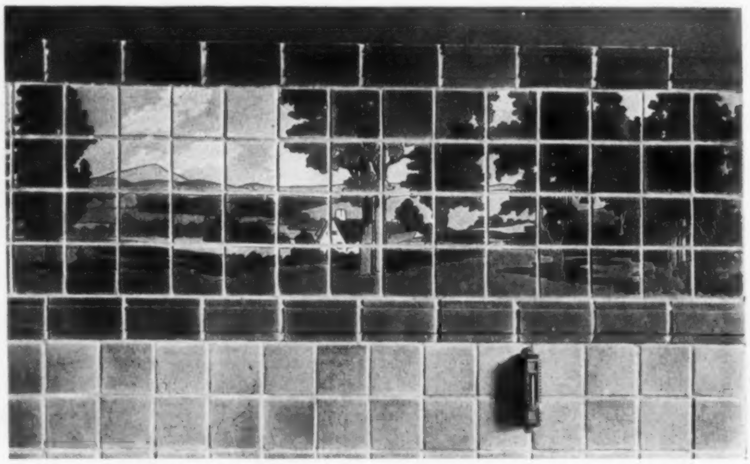
CHICAGO AND NORTHWESTERN RAILWAY STATION, CHICAGO, ILL.
Frost & Granger, Architects.

Concourse.
Entrance Lobby.

Burned Clay in the New Chicago and Northwestern Station.

WITH the opening of the new terminal station at Chicago, of the Chicago and Northwestern Railroad, a worthy gateway is flung wide to the golden west.

The thought and care of years have been crystallized and built into tangible form, and the crowding throng of suburbanites and general traveling public have rushed in, with their wide variety of wants, and have found them anticipated and provided for.



DETAIL IN TEA ROOM.

Five years of construction have followed on after many years of careful study and planning; $23,000,000 expended; four hundred and fifty-five buildings wrecked to make place for the new structure covering twenty acres; two hundred and twenty-six caissons extending to bed rock more than 100 feet below; forty-three thousand separate piles; thirty-seven thousand tons of riveted steel; five different switch towers operating six hundred levers; all manner of electric elevators for handling passengers, baggage, etc.; rest rooms with toilets for passengers and employes; and a smooth running arrangement for shunting one lot of passengers in and another out without mixing.

In entering this station at the street level one finds himself in a room a block long through which are vistas between forests of fluted enameled terra cotta columns each of which is joined to four others by elliptical soffit arches of enameled terra cotta. Over this and filling in between are the groined ceiling arches of tiling of a lighter tint, while the wall surfaces are of a cool green enamel tiling.

TEA ROOM.

The traveler, ticketed and checked, passes up the main stairway into the concourse, another room a block long and as clean and bright as the one below, but with a high beamed ceiling of enameled terra cotta. Here again the walls are of the soft green tile. Adjoining this concourse and on the same floor is the main waiting room with a high vaulted ceiling spanned by big ribs of terra cotta in tints of green and cream. The decorations in the ribbed terra cotta vault overhead are done in drive wheels, engine bells, wrenches, headlights and hammers. Out of this room on the different floors are dining rooms, barber shops, bath rooms, dressing rooms, rest rooms, smoking rooms, and a fully equipped hospital. Particularly notable is the tea room in green-enameled tile, around which is a frieze of country landscape executed in tile.

In this new station burned clay in its various forms has been used extensively for constructive and decorative purposes. The architects and railroad officials have here paid tribute to its value in a work of this character. Its brightness, which is easily maintained, gives a feeling of cleanliness, its colors add a cheerful note to the ensemble, and the fire-resisting qualities of the material insure permanency.

The exterior of the main building is mainly granite, although terra cotta has been used on the high parts, which, while matching the granite in effect, is lighter for the steel to carry and at the same time has a fire resistance much greater than the granite. The balance of the building stretching down three entire blocks is of brick and terra cotta, while the endless array of rooms for all the multitude of uses are in enameled clay finish clear down to and ending in the enameled walls of the big power station.

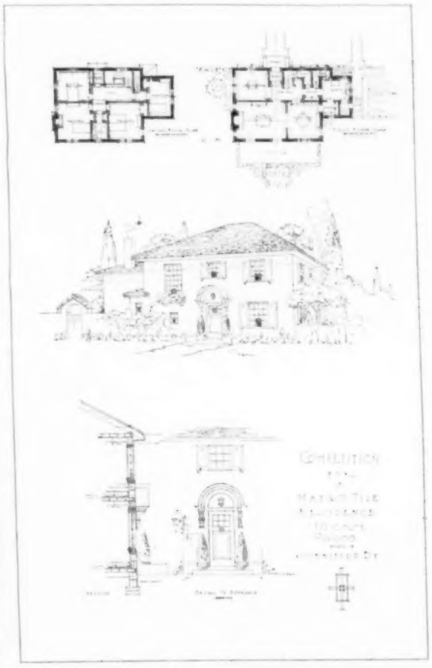
Competition for a Small House to be Built of Natco Hollow Tile.

Report of Jury.

THE jury selected to award the prizes in The Brickbuilder competition for a small house to be built of Natco Hollow Tile, at a cost not exceeding $6,000, have examined the two hundred and fifteen designs submitted and find that a very large number were of a high order of merit and demonstrated the possibility of adapting the material specified to a great variety of style and construction.

The jury regrets that a number of the best designs, from both an artistic standpoint and from the standpoint of adaptability, were excluded from competition owing to excessive cubage, as the limit placed upon the size of the building in the program was made mandatory. The jury feels that several of these designs were of the type which should be most encouraged in work of this nature and express the hope that in future competitions greater care will be exercised by those men who undoubtedly had offered the most pleasing solution of the problem.

Submitted by L. E. Varian, Denver, Colo.



Submitted by H. H. Wrenn, Norfolk, Va.

TWO DRAWINGS IN THE COMPETITION FOR A SMALL HOUSE OF NATCO HOLLOW TILE.

In making the award, the jury finds that the design submitted by Mr. Walter is a charming example of the style chosen and is developed from an excellent plan. The plan contains all the essentials of a house of this size, arranged in a most convenient relation. The design, however, is handicapped by a poor presentation which prevents the full possibility of the house being apparent on first examination.

The second prize was awarded to the design submitted by Mr. Lehti. This design presents a house of great simplicity and charm of proportion and composition, but upon analysis it is apparent that this charm of composition has been obtained at the expense of a practical interior — all of the second floor rooms being badly cut into by the roof. The detail employed is restrained and in sympathy with the simple lines and surfaces of the composition.

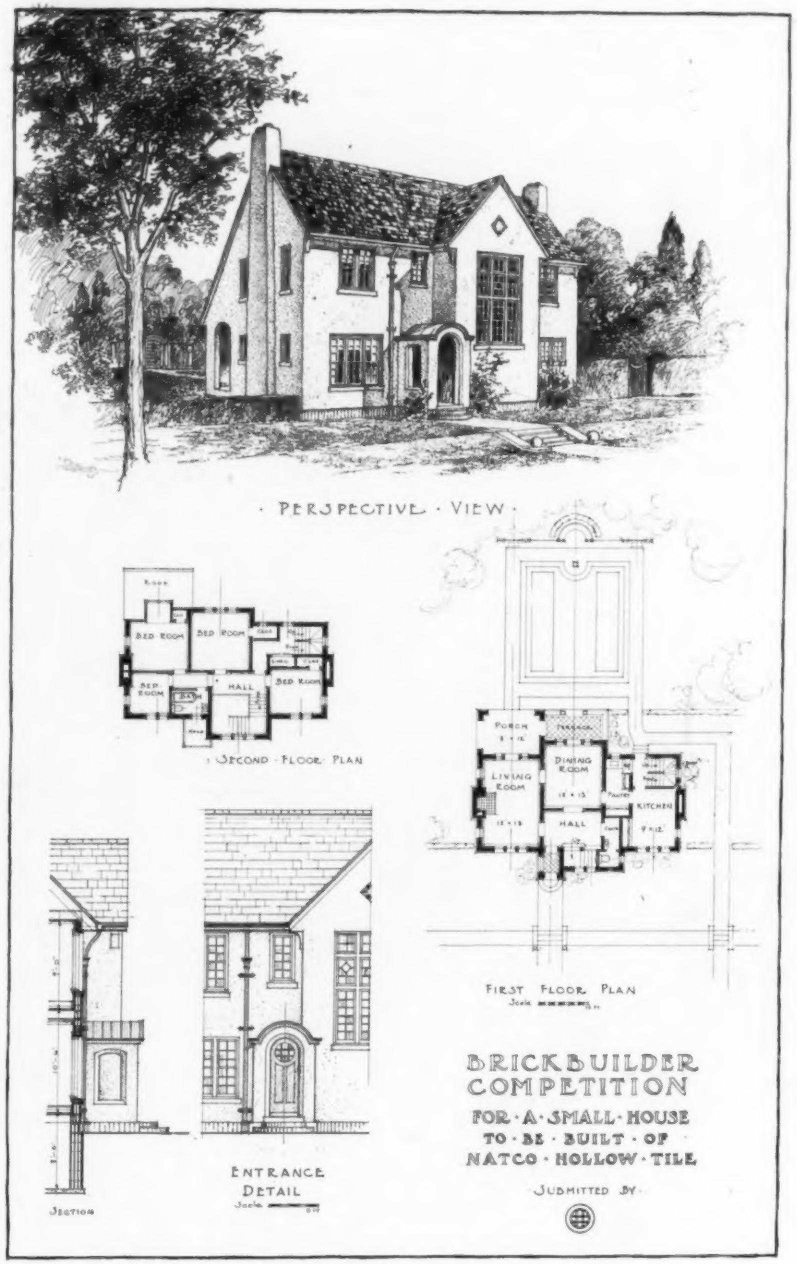
In the design placed third Mr. Bohacher presents a house of a distinctly different type. The design of the exterior is particularly well suited to the material specified. The fenestration together with the large unbroken surfaces of wall, while pleasing in execution and making possible an economic use of tile in the walls, is not an expression of the plan or a logical and sincere development of the house as planned.

The fourth prize has been awarded to Mr. Bulman, who shows a compact type of building of formal design, which formality, however, is attained by an extremely simple use of the material required. The character of detail employed is commended as being in strict harmony with the simple dignity of the whole composition. This house would be well adapted to a small lot developed as a formal garden.

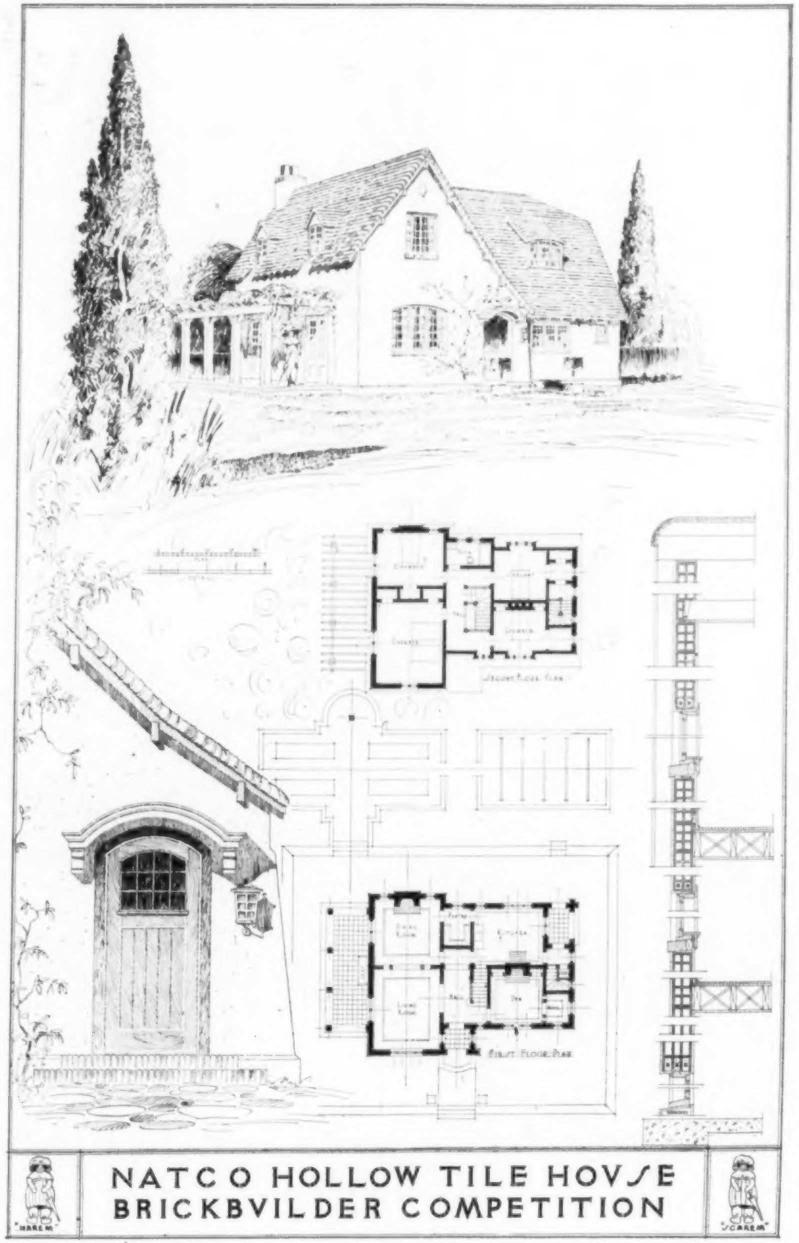
Equal Honorable Mention has been awarded to Messrs. Schneider, Weihe, Keefer, Hazen, Roberts & Hallaren, and Aegerter, whose designs present a number of pleasing suggestions ranging from the highly picturesque to the strictly formal. The majority of these designs lean, perhaps too much, toward the picturesque; and it is regretted by the jury that there have not been more designs presented which would express the simple dignity which could so excellently have resulted from a logical and straightforward use of the material specified.

Benno Janssen, Pittsburgh (Janssen & Abbott).
Harrie T. Lindeberg, New York (Albro & Lindeberg).
Milton B. Medary, Jr., Philadelphia (Zantzinger, Borie & Medary).
Robert C. Spencer, Jr. (Chicago).
William B. Stratton, Detroit (Stratton & Baldwin).

Jury of Award.

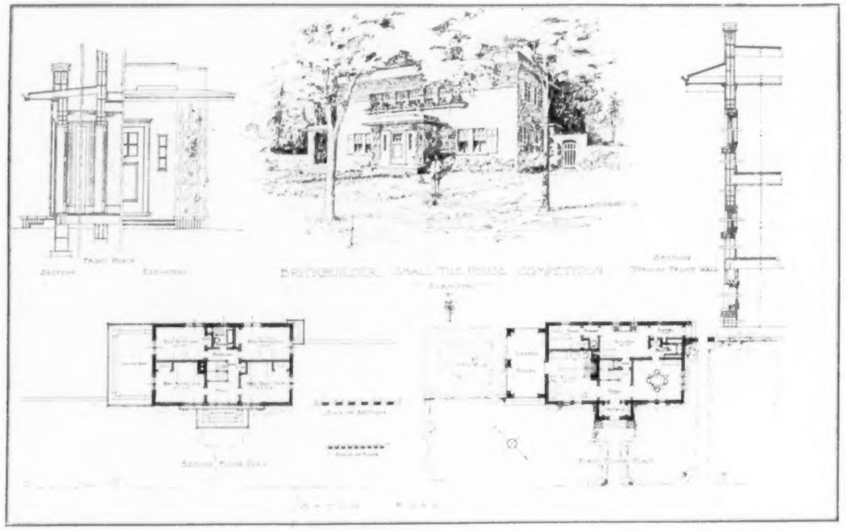


FIRST PRIZE DESIGN.
Submitted by Eugene L. Walter, Buffalo, N. Y.

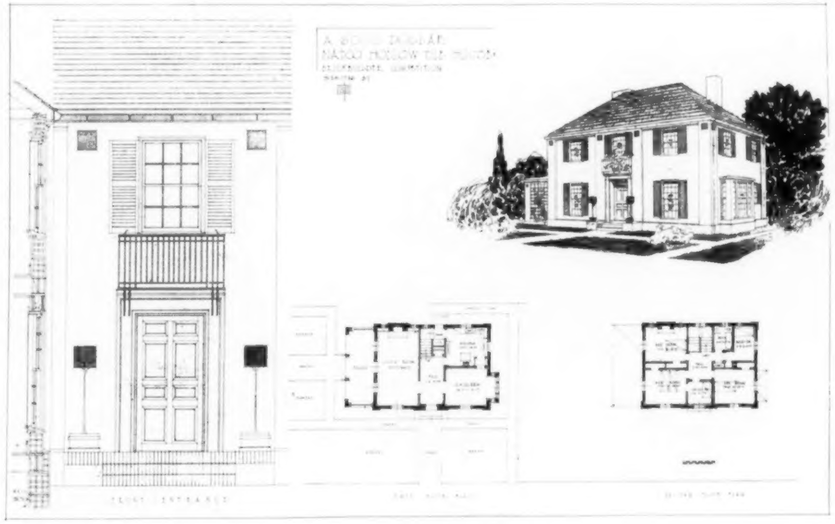


SECOND PRIZE DESIGN.
Submitted by Jack Lehti, Washington, D. C.

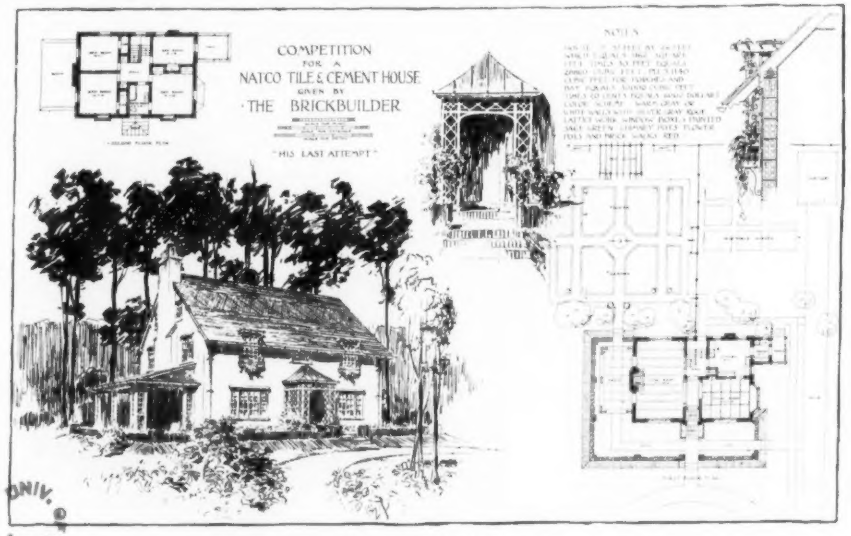
THE BRICKBUILDER COMPETITION FOR A SMALL HOUSE OF NATCO HOLLOW TILE.



THIRD PRIZE DESIGN.
Submitted by Herbert H. Bohachek, Boston, Mass.



FOURTH PRIZE DESIGN.
Submitted by Francis D. Bulman, Boston, Mass.

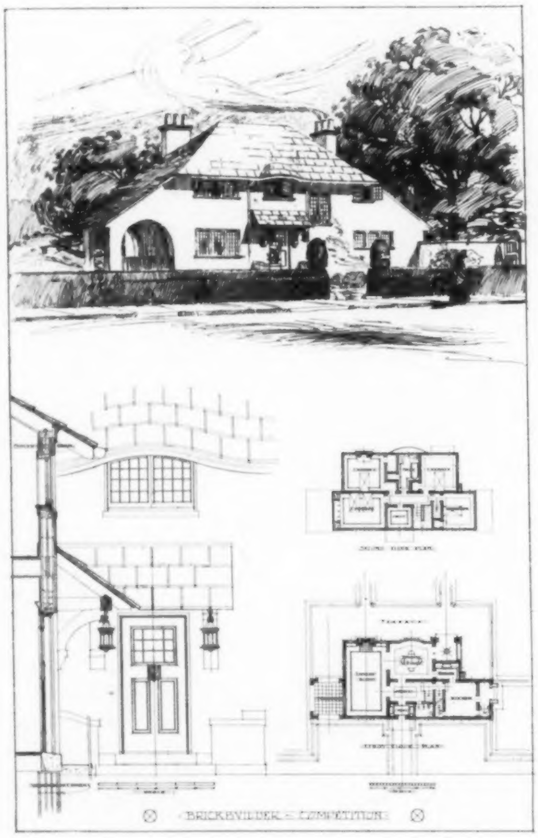


MENTION DESIGN.
Submitted by Charles Sumner Schneider, Cleveland, Ohio.

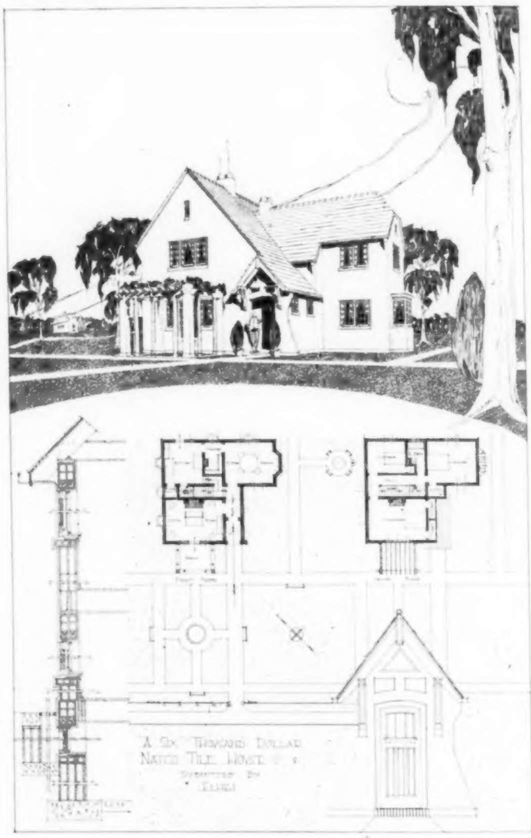
MENTION DESIGN.
Submitted by F. M. Roberts and J. E. Hallaren, Boston, Mass.

THE BRICKBUILDER COMPETITION FOR A SMALL HOUSE OF NATCO HOLLOW TILE.

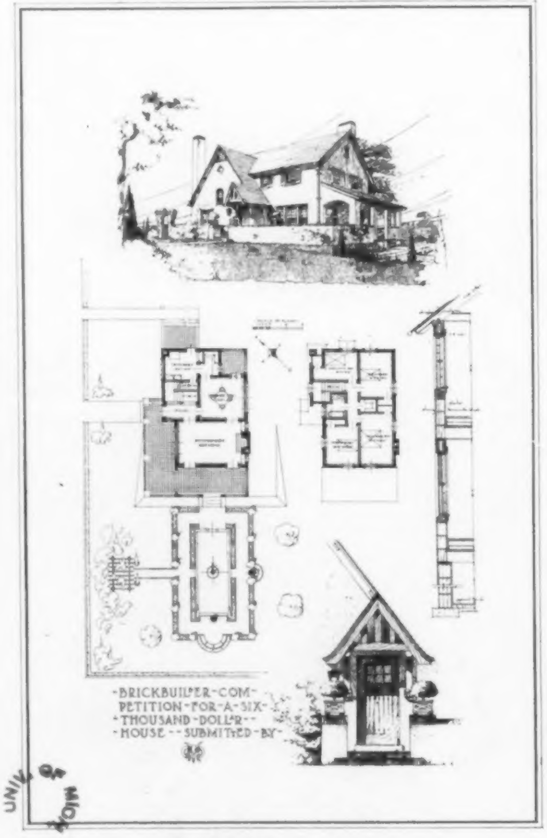
UNIV. OF MICH.



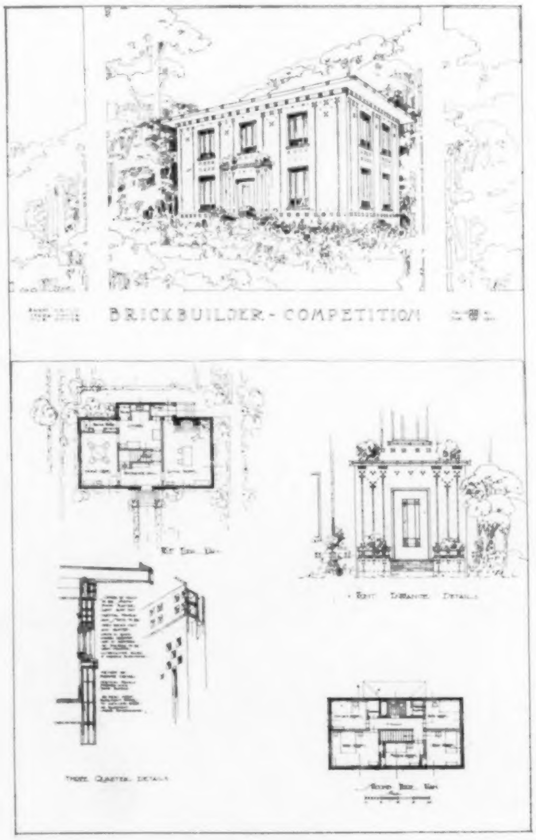
MENTION DESIGN.
Submitted by H. S. Hazen, Jr., Boston, Mass.



MENTION DESIGN.
Submitted by Gustave W. Aegerter, St. Louis, Mo.



MENTION DESIGN.
Submitted by Wm. W. Keefer, 2d, Lansdowne, Pa.



MENTION DESIGN.
Submitted by Ernest E. Weihe, San Francisco, Cal.

THE BRICKBUILDER COMPETITION FOR A SMALL HOUSE OF NATCO HOLLOW TILE.

Plate Illustrations—Description.

SCHOOL OF INDUSTRIAL ARTS, TRENTON, N. J. PLATES 85, 86. The purpose of this school is to offer free instruction in all the practical and fine arts courses. The exterior is of "Tapestry" brick with trimmings of polychrome terra cotta. The base of the building is of a local granite and the clock over the main entrance is of carved wood, gilded and colored. The auditorium will seat four hundred. The fourth floor provides for machine and architectural drawing together with class rooms and toilets; the fifth floor takes care of designing, antique, free hand, painting, life-class, storage and toilets. The building, which is strictly fireproof, is equipped with a steam heating plant and modern plumbing. The contents of the building are 452,000 cubic feet, estimated from the basement floor level to the top of the flat roof. The total cost was $91,000, making $.201 per cubic foot.

NORTH CHICAGO HEBREW CONGREGATION TEMPLE, CHICAGO. PLATE 87. The exterior of the temple is of a rich brown Oriental brick with slight variation in colors, and trimmings of stone. The first floor is constructed directly on the ground. Steel trusses support the wood roof joists which are protected below by a plaster ceiling suspended on expanded metal. In order that the main auditorium can be used during the daytime without artificial light, large windows are provided with semi-translucent glass The electric lighting is entirely concealed by placing the lights back of the projecting cornice, from where they are reflected downward by the curved ceiling. The seating capacity, including the balcony, is twelve hundred. The interior decoration consists of panels outlined with flat bands, tinted throughout in tan and ecru colors. The building adjoining has an assembly room on the first floor which seats three hundred and fifty, while the second floor is devoted to school purposes. The ground to the left of the auditorium will be treated as a sunken garden. The cubage estimated from the footings is 618,000 feet for both buildings. The total cost including the organ and architect's fee was $80,000, making the cost per cubic foot approximately 13 cents.

CLUB HOUSE, PITTSBURGH ATHLETIC ASSOCIATION, PITTSBURG. PLATES 88-92. The exterior of the building is of terra cotta and has for its prototype in design the Palazzo Sanmicheli, Venice. In order to avoid unusual story heights and large window treatments the swimming pool, gymnasium and squash courts have been placed in the center of the building. The women's department is independent of the rest of the building, while the entrances to the swimming pool and gymnasium are so arranged as to be entirely closed off from the men. The dressing rooms are arranged in groups of three with a lavatory in the center. The large lobby is entirely finished in pink Tennessee marble; the dining room is covered from floor to ceiling with landscape decoration; the grill room is paneled in finished oak throughout; and the billiard room has a latticed effect on the walls and cork tiling on the floor. The swimming pool, which is 25 feet by 75 feet, is finished in green and white terra cotta. The special features are the scum gutters which run around the pool at different levels, the curb which protects spectators from being splashed, and the rubber flooring at the ends. The pool is supported on steel columns which rest on piers that extend to solid rock 14 feet below the cellar level. The tank itself is constructed of boiler iron, inside of which are consecutive layers of concrete 6 inches thick, lead with a total weight of twenty-two tons, concrete 3 inches thick, and white tile bricks 3 inches thick. The gymnasium, 48 feet by 96 feet, has a permanent stage at one end and two galleries, one for pulley weights, etc., the other for the running track which is covered with cork. The roof of the gymnasium is flat and tiled for outdoor games. Three floors accommodate fifty-nine bedrooms, so arranged as to be used with or without baths, en suite or separate. The cost of the building was approximately $700,000.

Editorial Comment and Miscellany.

ACOUSTICS.

MR. H. H. STATHAM, writing on the subject of "Buildings for Music" in *The Architects' and Builders' Journal* says: "Acoustic effect is a most elusive problem; buildings which ought not, theoretically, to be good for sound sometimes proving unexpectedly satisfactory, while those over which great pains have been taken turn out failures. But one general principle is undeniable: it should be the object of a concert-room to assist sound at its point of production, and to prevent any reflection or reduplication of it by echo when it has once been produced. In the construction of the orchestra and its surroundings nothing is so suitable as wood. Hard substances on the walls will drive sound forward, but will give it a harsh clanging effect. Textiles, on the other hand, drink up sound without vibrating with it; there should therefore be no curtains or such things anywhere about the orchestra. In the auditorium they may sometimes be useful in choking an echo, but this is only when the building is wrong to begin with. Fibrous plaster is a good material for lining the walls of the auditorium; it acts in sympathy with sound without producing much echo. As a general rule, all

DETAIL FOR THEATER.
Executed by Conkling-Armstrong Terra Cotta Company.
Albert Kahn, Architect.

THE BRADLEY MEMORIAL FOUNTAIN, CAMBRIDGE, MASS.
McKim, Mead & White, Architects.

substances which give sharp reflections of light will give sharp reflections of sound; polished marble and other such materials are therefore misplaced in a concert-room. Plate glass windows are equally bad; they send sharp echoes back; windows should be broken up into small panes with wooden bars. Then shape has to be considered as well as material. As a general rule, concave surfaces are bad, either in plan or section; they tend to focus echo. The two best rooms I can remember for hearing music were the old Exeter Hall, a wide parallelogram with the seats going up in a slope from front to back (the plan adopted also by Wagner in his Bayreuth theatre), and the Liverpool Philharmonic Hall, also a parallelogram, with a flat floor, and a flat ceiling with a cant at the walls, and the surface broken up by a cross rib pattern in relief. . . . "

A DRUG STORE AT DETROIT.
Baxter & O'Dell, Architects.

ANCIENT ROME.

AN EXHIBITION has just been opened in one of the vaults of the Baths of Diocletian, consisting of a reconstruction of Rome in the time of Constantine, about A.D. 330. The model, executed in white plaster, is about ten yards in length and six in width, and shows the various buildings of the ancient city on a scale which makes them easily recognizable. The work is that of M. Bigot, formerly a pensionnaire of the French Academy in Rome, who has spent eight years in compiling the data and finishing the plans. The area of the city represented is from a little north of the Porta Flamina, now the Porta del Popolo, to a little south of the tomb of Cecilia Metella on the Appian way, and from the right bank of the Tiber to the line of the old Servian Wall.

DETAIL BY BARNETT, HAYNES & BARNETT, ARCHITECTS.
Executed by American Terra Cotta Company.

THE EXPANSION OF THE CITY PLANNING MOVEMENT.

NOT the least of the educational value of the recent City Planning Exhibition at Philadelphia was the interesting and valuable series of half-hour talks given every day in the Mayor's Reception Room in the City Hall by experts on city planning subjects. These talks were nearly all of them illustrated by lantern slides, and all were well attended by audiences composed of men and women interested in the respective subjects and by a large proportion of persons who were in the building for the purpose of viewing the Exhibition and who were attracted by the posters and circulars announcing the lectures. So well conducted was the instructional campaign in connection with this Exhibition that it was

a common occurrence for bodies of business men, improvement associations, graduating classes, and many other organizations and collections of individuals to be shown through the Exhibition and have its significance in one way or another applicable to themselves pointed out by competent authorities.

DETAILS, BUILDING FOR THE PITTSBURGH ATHLETIC ASSOCIATION.
Executed in terra cotta by the Atlantic Terra Cotta Company. Janssen & Abbott, Architects.

GREEK TEMPLE UNEARTHED IN CORFU.

DURING recent excavations on the site of the ancient city of Corcyra the ruins of a temple together with its sculptures were unearthed. Complete drawings have been made of the pediment of the temple, which has been ascribed to Apollo, as well as of the statuary, which apparently belongs to the Western pediment. The work will be continued under the supervision of Dr. Dorpfeld, who has already met with such great success.

UNIVERSITY CHAIR FOR FRENCH ARCHITECT.

THE Directors of Washington University, St. Louis, announce the appointment of M. Charles Abella of Paris, France, as Professor of Design in the School of Architecture. M. Abella is a graduate of l'École des Beaux Arts, was "logiste" three times and in 1907 secured the first second Grand Prix de Rome. As a practitioner he won the competitions for the "Hotel de Ville d'Essones" and the "Home for the Insane." For several years he has been associated with M. Bernier in the work of the Atelier Bernier. M. Abella will assume his duties at Washington University in September 1911, and will take direct charge of the work of intermediate and advance design.

DETAIL BY SEYMOUR AND PAUL DAVIS, ARCHITECTS.
Executed by the O. W. Ketcham Terra Cotta Works.

MISSION CITY AT PANAMA—CALIFORNIA EXPOSITION.

WORK will soon be started on the Mission City in Balboa Park for the Panama-California Exposition, designs for which have been prepared by Bertram G. Goodhue, architect. The buildings will be completed as rapidly as possible in order to give ample time for the remainder of the exposition work. The Mission City will be one of the salient features of the exposition and will follow in amplified form the architecture which the "padres" of early California used for their edifices.

THE PEOPLES GAS BUILDING, MICHIGAN AVE., CHICAGO.
At the right is the Municipal Courts Building faced with white enameled terra cotta. At the left the Pullman Building, now 30 years old, with trim of red terra cotta. The architectural terra cotta used in the three buildings was furnished by the Northwestern Terra Cotta Company.
D. H. Burnham & Co., Architects.

ARNOLD W. BRUNNER, President of the New York Society of Architects, is traveling abroad in quest of ideas to incorporate in the new building for the State Department at Washington. Mr. Brunner is planning to have not only a large conference room, in which international meetings may be held, but also a monumental hall for state banquets. This is an entirely new departure, as hitherto America's foreign visitors have had to be entertained at hotels, etc.

TELEPHONE BUILDING, CINCINNATI, OHIO.
Roofed with American "S" tile.
Hake & Kuck, Architects.

THE Emperor of Germany has decided that the statue of General von Steuben, the German hero of the American revolution, which the United States Congress has presented to Germany, shall be erected at Potsdam. It has been found necessary to reconstruct the garden selected and to remove a marble fountain in order to give the Steuben memorial a place befitting its monumental character.

THE foundations of the Bank of England, London, are being repaired on account of a slight subsidence. The original piles on which the bank has stood for nearly two hundred years are in an exceptionally good state of preservation. During the excavations considerable Roman pottery ware has been unearthed.

DETAIL BY HARRY HOWELL, ARCHITECT.
Executed by the New Jersey Terra Cotta Company.

THE administrators of Tulane University, New Orleans, having decided to remove the H. Sophie Newcomb Memorial College to another site, and to erect a group of buildings for its accommodation, have appointed a committee to select an architect for the purpose. A program of competition, approved by the American Institute of Architects, has been prepared, and Prof. Warren P. Laird of the University of Pennsylvania has been selected as professional adviser. The terms of this program are exceedingly liberal, and it is expected to secure the interest of the most prominent architects of the country on account of the large amount of work to be done and the exceptional architectural opportunity afforded.

All architects interested in this competition can secure a preliminary announcement by addressing the request to the President of Tulane University, in which will be stated the terms under which this competition will be undertaken.

IN GENERAL.

William DeForest Crowell has been admitted to the firm of Mauran & Russell, architects, St. Louis. The new style of the firm is Mauran, Russell & Crowell.

Cary Selden Rodman, of the firm of Butler & Rodman, architects, New York, died on the 12th of June.

Harvard University has established a Department of Landscape Architecture.

DETAIL OF BUILDING, 150 FIFTH AVE., NEW YORK.
Work executed by the New York Architectural Terra Cotta Company.
Milton See & Son, Architects.

The Cleveland Architectural Club at its annual meeting elected the following officers: President, William R. Powell; Vice-President, Albert E. Skeel; Treasurer, William A. Bohnard; Secretary, L. Fewsmith, Jr.

W. L. Menzies, architect, has opened an office at 23½ S. Western avenue, Oklahoma City. Manufacturers' catalogues desired.

The Atlantic Terra Cotta Company furnished the architectural terra cotta for the School of Industrial Arts, Trenton, and the Pittsburgh Athletic Association Building, at Pittsburg. Both of these buildings are illustrated in the Plate Forms of this number.

Fiske's "Tapestry" brick was used in the School of Industrial Arts at Trenton.

The following named manufacturers of burned-clay supplied their materials for the new Chicago and Northwestern Station, which is illustrated in this issue: American Terra Cotta & Ceramic Co.; National Fire Proofing Company; R. Guastavino Co.; Grueby Faience & Tile Co.

FACTORY BUILDING, CLEVELAND, OHIO.
J. Milton Dyer, Architect.

HOUSE, LINDELL BOULEVARD, ST. LOUIS, MO.
Brick manufactured by the Hydraulic-Press Brick Company.
Mauran & Russell, Architects.

The Superintendent of Building and Grounds for the University of Chicago desires manufacturers' catalogues pertaining to the various branches of work which come under his department.

A very interesting review of work recently executed by the Atlantic Terra Cotta Company has just been issued by them in brochure form.

The memorial to Queen Victoria, just unveiled, was designed by Sir Astor Webb.

POSITION WANTED.

First class draftsman and architect's assistant fully competent to take entire charge on high class work desires position upon expiration of present contract. Excellent reasons for making a change. Confidential correspondence invited.

Address West, care The Brickbuilder.

WANTED.

Specification writer with large experience, for architect's office in the Middle West. An excellent opportunity for a capable man with plenty of energy. Write fully stating experience, reference and salary.

Address, Wolverine, care The Brickbuilder.

BRICK AND TERRA COTTA PLANT WITH FIVE (5) KILNS AT RAILROAD STATION (WITH SIDING) FORTY-FIVE MILES FROM PHILADELPHIA. RENT FREE FOR TEN YEARS TO ANY RESPONSIBLE PARTY WHO WILL MAKE CLAY PRODUCTS; UNLIMITED SUPPLY OF CLAY ON PROPERTY HALF MILE FROM WORKS. ADDRESS EDWIN F. MORSE, S. W. CORNER 12TH & SANSOM STS., PHILADELPHIA.

"**SPECIFICATION BLANKS,**" by T. Robert Wieger, architect (formerly with F. E. Kidder). Forms for all classes of buildings, each trade separate. Complete set, 44 pages, 25 cents. Reduction on quantities. Sample page upon request. 628-14th street, Denver, Colo.

University of Pennsylvania

School of Architecture

FOUR YEAR COURSE. (*Degree B.S. in Arch.*) Options in design and architectural construction.

GRADUATE YEAR. (*Degree M.S. in Arch.*) Allowing specialization in advanced work. Fellowships.

SPECIAL COURSE of two years. (*Professional Certificate.*) For qualified draftsmen.

ADVANCED STANDING granted for equivalents completed elsewhere.

SUMMER SCHOOL in architecture and allied subjects. Special circular.

YEAR BOOK illustrating work in design, drawing, etc., mailed without charge.

FULL INFORMATION will be sent on application to the Dean of the College Department, Dr. George E. Fisher, University of Pennsylvania, Philadelphia, Pa.

Information for Architects.

We design, build and install three styles of floor-to-floor conveying devices, viz.:

OPEN GRAVITY FRICTION SPIRAL CHUTES,
AUTOMATIC STRAIGHT-LIFT ELEVATORS,
DOUBLE ROLLER GRAVITY SPIRALS.

No modern factory building complete without one of these labor- and time-saving devices permanently installed. Architects may become fully informed concerning these modern devices by addressing the home office or any of our branch offices listed below:

Mathews Gravity Carrier Company,

ST. PAUL, MINN., U. S. A.

Boston, 164 Federal St.
New York, 30 Church St., Room 337
Philadelphia, 1002-3 Drexel Bldg.
Chicago, 213 Roanoke Bldg.
St. Louis, Box 568

CANADIAN MATHEWS CO., Ltd., 28 Sheppard St., TORONTO
BRITISH MATHEWS CO., Ltd., 147 Upper Thames St., E. C., LONDON

BOILERS AND RADIATORS

MANUFACTURERS OF

Water Tube and Return Flue Boilers
Plain and Ornamental Direct Radiators
Direct-Indirect Radiators
Indirect Radiators

For Steam and Water Warming

Send for complete illustrated catalog

THE H. B. SMITH CO.

Westfield, Mass. **New York**
Philadelphia **Boston**

"TAPESTRY" BRICK

TRADE MARK — REG. U. S. PATENT OFFICE

BULLETIN

RECENT WORK, illustrated in this issue of

THE BRICKBUILDER

School of Industrial Arts, Trenton, N. J. . . Plates 85, 86

Cass Gilbert, Architect

FISKE & COMPANY INC
FACE BRICKS } ESTABLISHED IN 1864
FIRE BRICKS }

25 Arch St., Boston **Arena Building, New York**

Ideal Floor Covering
FOR CEMENT FLOORS

Linoleum secured by waterproof glue to cement floors can be furnished in plain colors or in inlaid effects.

Cork Carpet in plain colors.

Elastic, Noiseless, Durable.

Is practical for rooms, halls, and particularly adapted to public buildings.

Should be placed on floors under pressure and best results obtained only by employing skilled workmen.

Following examples of our work:

Brookline Public Library. R. Clipston Sturgis, Esq., Architect.
Suffolk County Court House, Boston. George A. Clough, Esq., Architect.
Registry of Deeds, Salem, Mass. C. H. Blackall, Esq., Architect.

We Solicit Inquiries and Correspondence

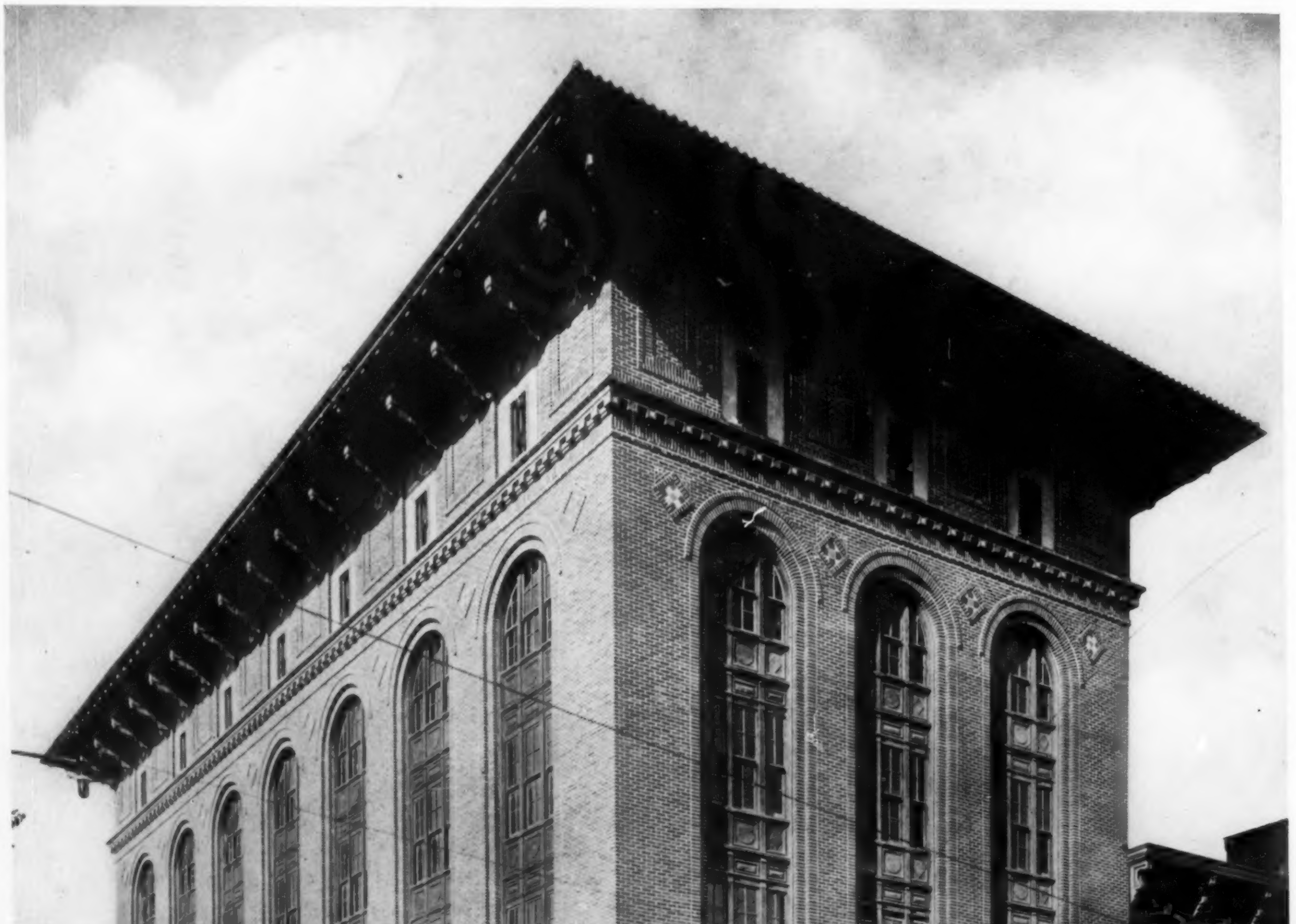
Quality samples specially prepared for architects and builders mailed on application.

JOHN H. PRAY & SONS CO.

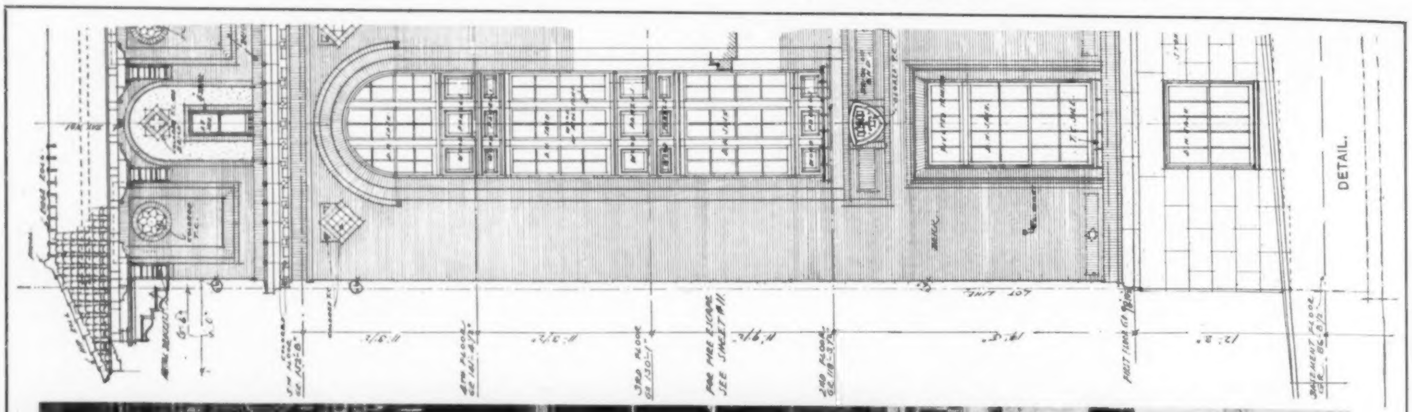
Floor Coverings — Wholesale and Retail

646-658 WASHINGTON STREET - BOSTON, MASS.

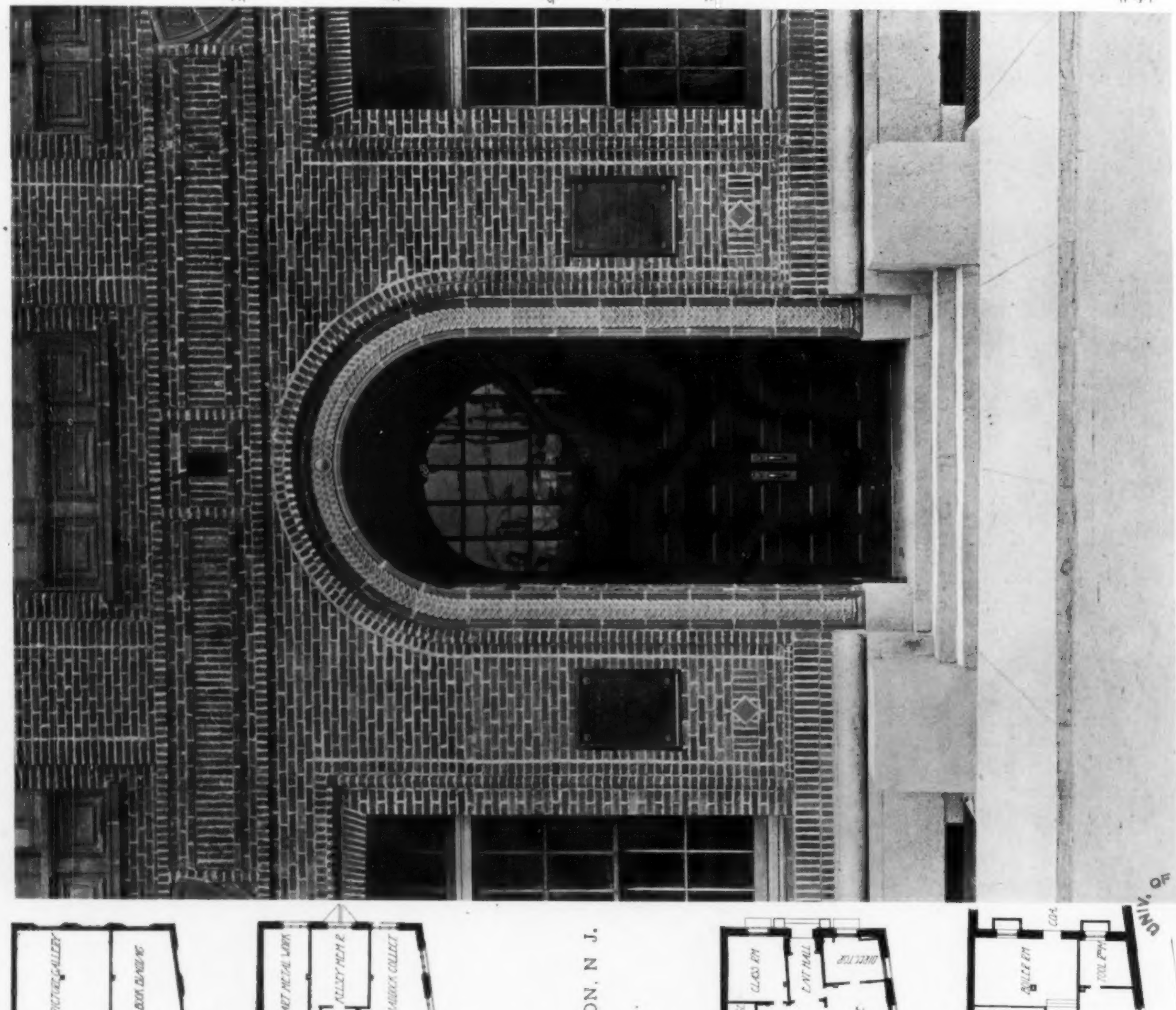
Have been continuously in this business for 93 years



SCHOOL OF INDUSTRIAL ARTS, TRENTON, N. J.
CASS GILBERT, ARCHITECT



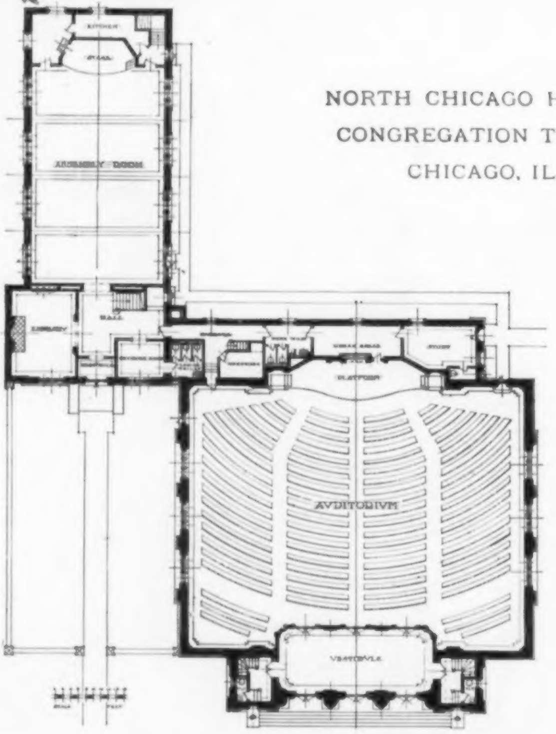
DETAIL.



DETAIL OF ENTRANCE.

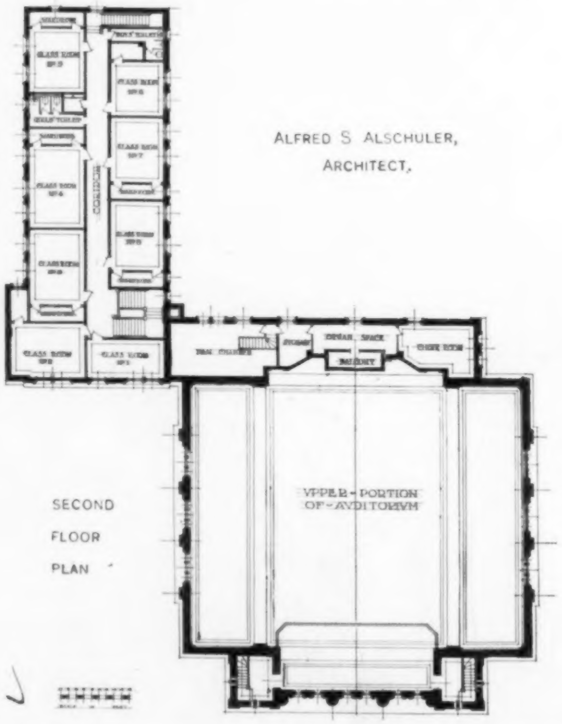
SCHOOL OF
INDUSTRIAL ARTS, TRENTON, N J.
CASS GILBERT, ARCHITECT

UNIV. OF MICH.



NORTH CHICAGO HEBREW
CONGREGATION TEMPLE,
CHICAGO, ILL.

FIRST
FLOOR
PLAN.



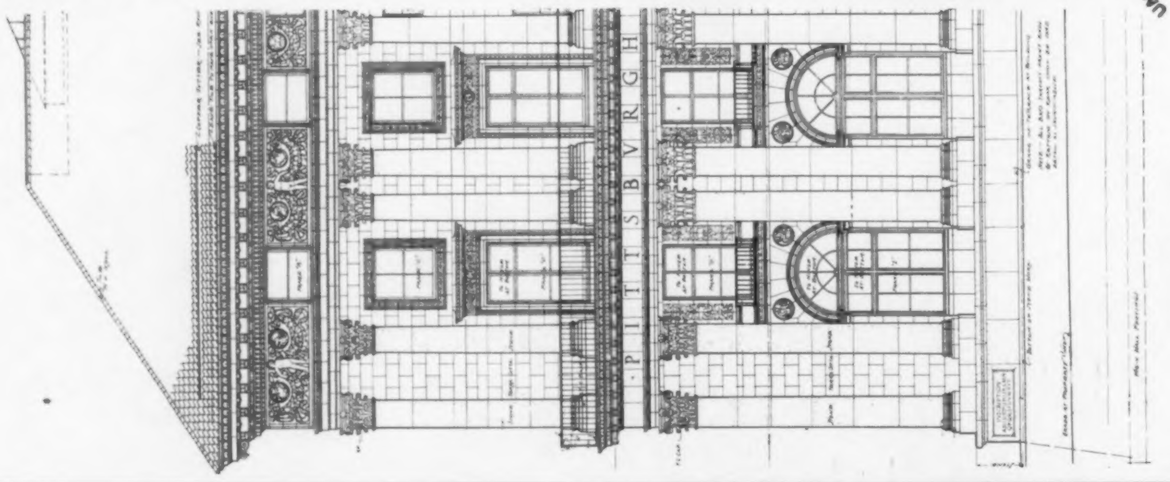
ALFRED S. ALSCHULER,
ARCHITECT.

SECOND
FLOOR
PLAN.

CLUB HOUSE FOR THE PITTSBURGH ATHLETIC ASSOCIATION, PITTSBURG, PA.

JANSSEN & ABBOTT, ARCHITECTS.

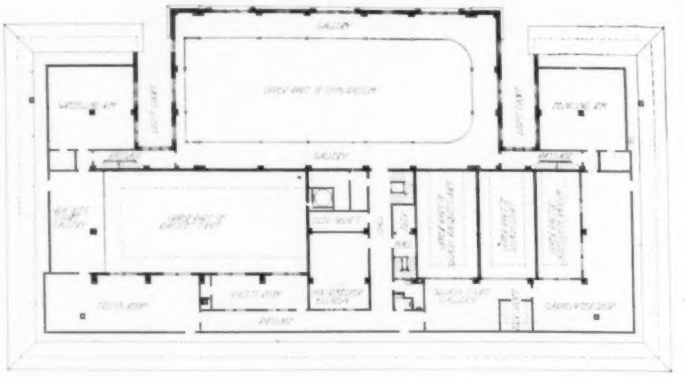
UNIV. OF MICH.



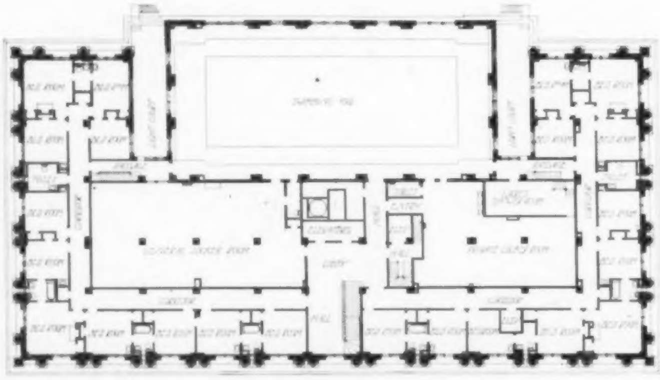
DETAIL AT CORNER OF MAIN ELEVATION.

VOL. 20, NO. 7. PLATE 89.

FIFTH FLOOR PLAN



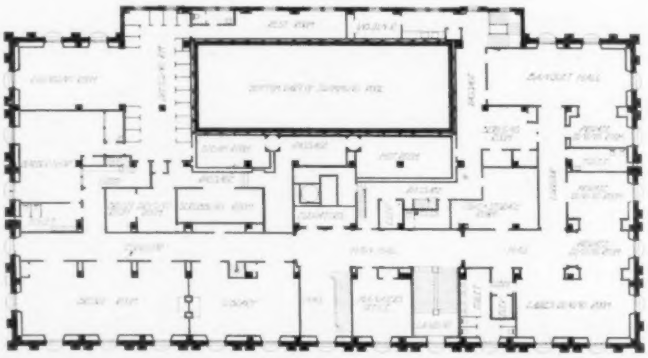
FIFTH FLOOR GALLERY PLAN



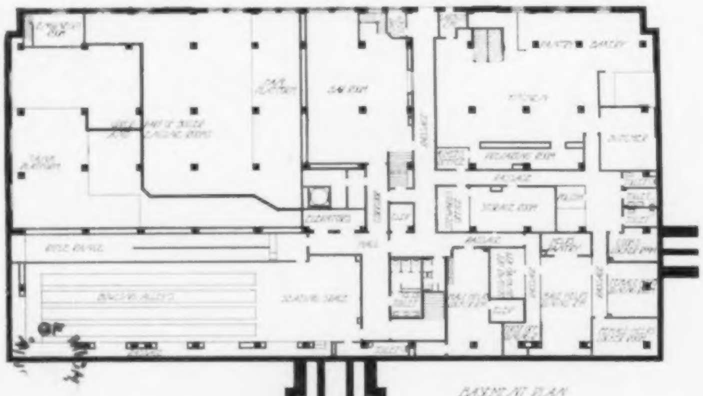
THIRD FLOOR PLAN

FOURTH FLOOR PLAN

FIRST FLOOR PLAN



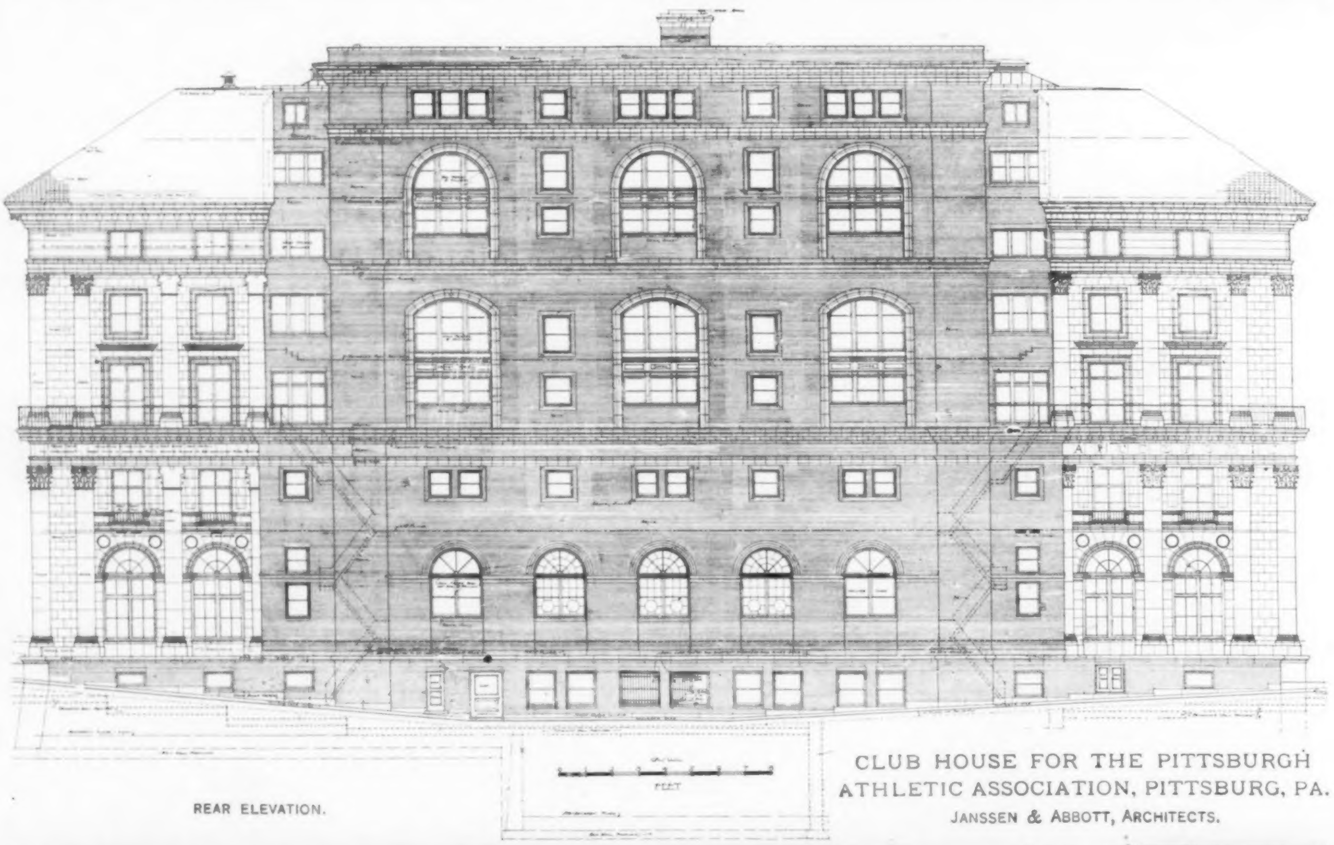
SECOND FLOOR PLAN



BASEMENT PLAN

CLUB HOUSE
FOR THE
PITTSBURGH ATHLETIC ASSOCIATION,
PITTSBURG, PA.

JANSSEN & ABBOTT, ARCHITECTS.



REAR ELEVATION.

CLUB HOUSE FOR THE PITTSBURGH ATHLETIC ASSOCIATION, PITTSBURG, PA.

JANSSEN & ABBOTT, ARCHITECTS.

SWIMMING POOL.

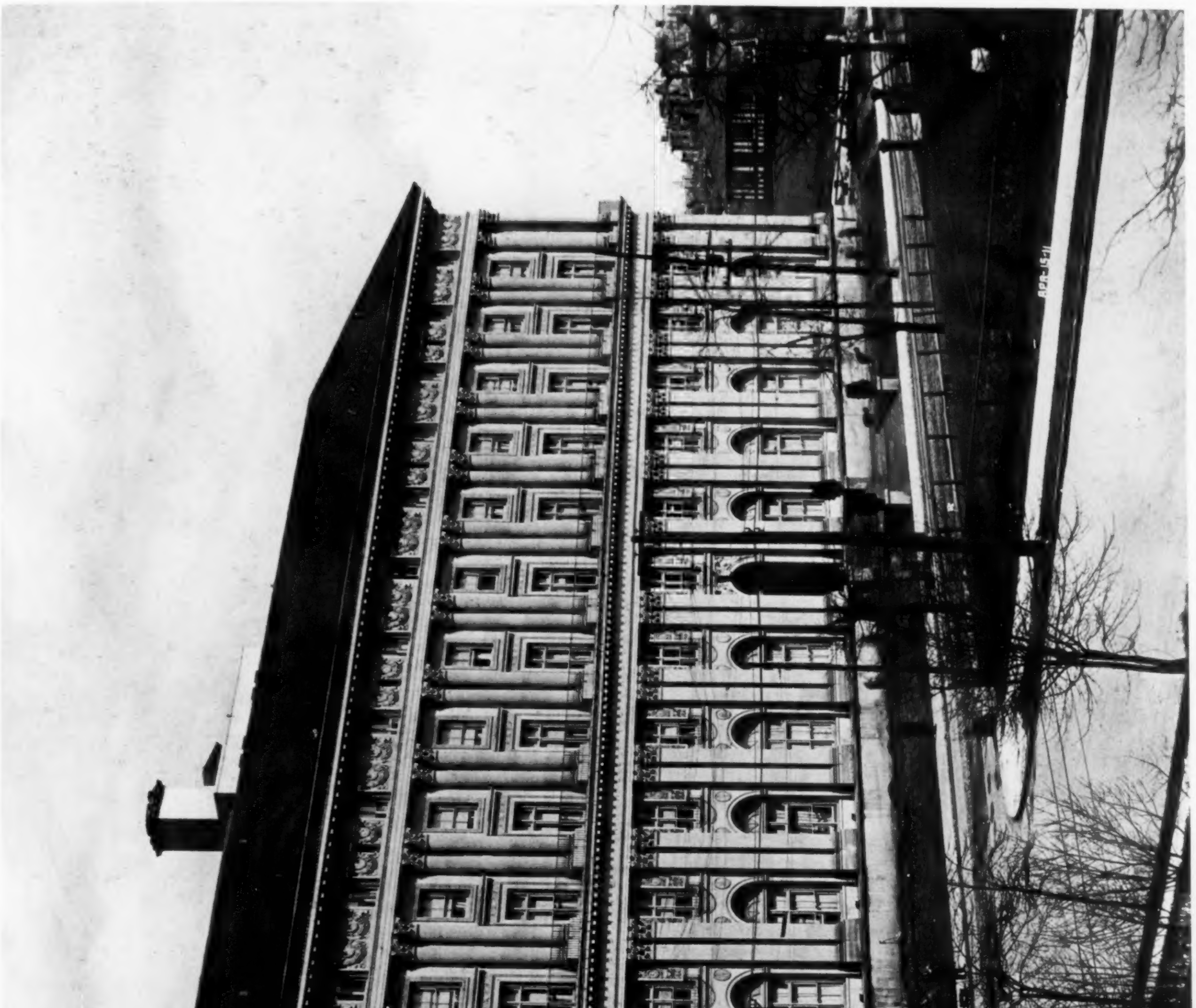
LOUNGING ROOM.

MAIN LOBBY

CLUB HOUSE FOR THE PITTSBURGH ATHLETIC ASSOCIATION, PITTSBURG, PA.

JANSSEN & ABBOTT, ARCHITECTS.

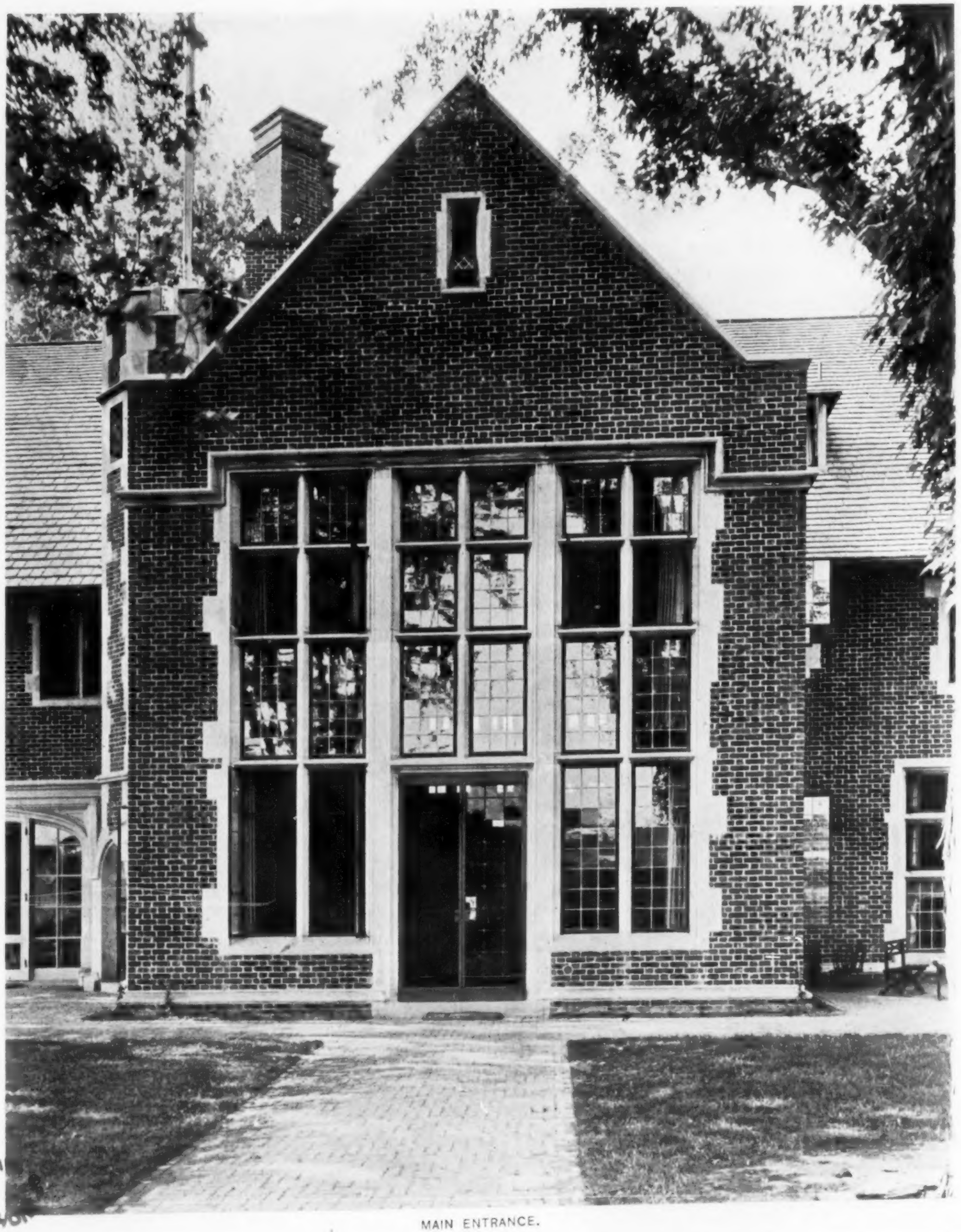
VOL. 20. NO. 7. PLATE 92.



CLUB HOUSE FOR THE PITTSBURGH ATHLETIC ASSOCIATION, PITTSBURG, PA.

JANSSEN & ABBOTT, ARCHITECTS.

HOUSE AT ROSLYN HEIGHTS, PA.
COPE & STEWARDSON, ARCHITECTS.



MAIN ENTRANCE.

GARAGE.

HOUSE AND GARAGE AT ROSLYN HEIGHTS, PA.

COPE & STEWARDSON, ARCHITECTS.

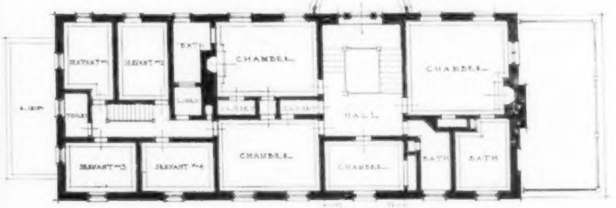
SECOND FLOOR PLAN

FIRST FLOOR PLAN.

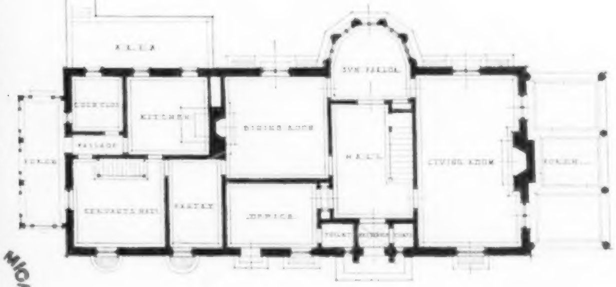
HOUSE AT HAVRE DE GRACE, MARYLAND.
PARKER, THOMAS & RICE, ARCHITECTS

UNIV. OF MICH.

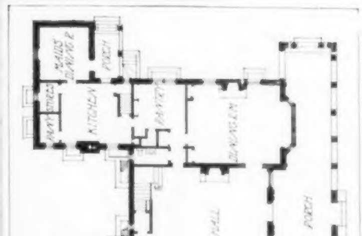
HOUSE AT HAVRE DE GRACE, MARYLAND.
PARKER, THOMAS & RICE, ARCHITECTS.



SECOND FLOOR PLAN.



FIRST FLOOR PLAN.



HOUSE AT OVERBROOK, PENNSYLVANIA.
CHARLES BARTON KEEN, ARCHITECT.

UNIV. OF MICH.

UNIV. OF MICH.

HOUSE AT OVERBROOK, PENNSYLVANIA.
CHARLES BARTON KEEN, ARCHITECT.